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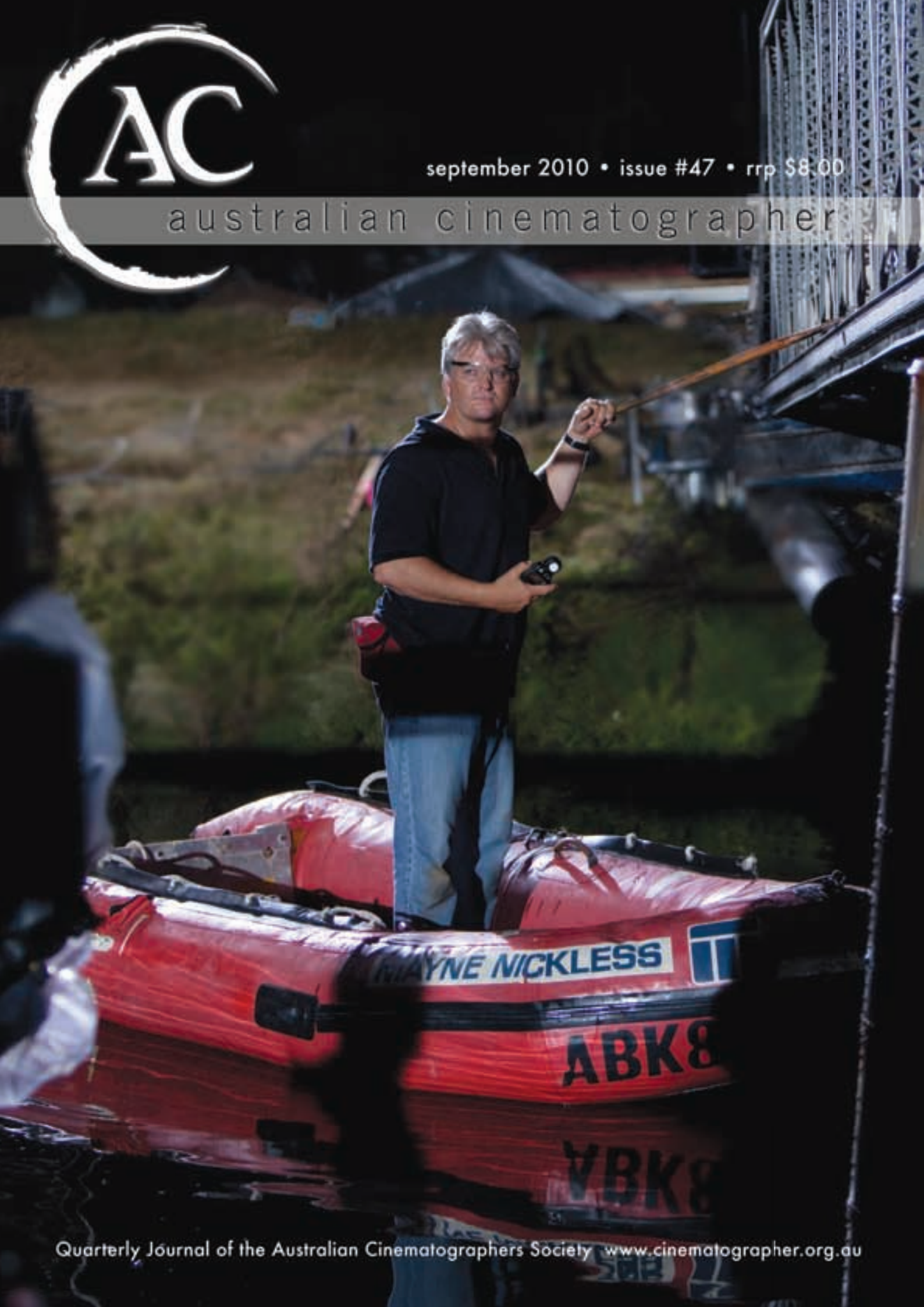

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BY DEFINITION

of the Australian Cinematographers Society's Articles of Association

"a cinematographer is a person with technical expertise who manipulates light to transfer visual information by the use of a camera into aesthetic moving images on motion picture film or electronic recording systems"

magazine

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australian cinematographer

Quarterly Journal of the
Australian Cinematographers Society

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Cover picture:

Ben Nott ACS on the set of Tomorrow When the War Began

FROM THE EDITOR

Here is another issue of your magazine; this time without me bleating about small fonts in credits. I want to mention two people who are pillars of strength for *Australian Cinematographer*. Their submissions arrive before the deadline, with captioned pictures, proof-read and full of good reading.

Nicola Daley and Tony Luu I salute you.

Butch Calderwood OAM ACS

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FROM THE PRESIDENT

Greetings, ACS colleagues,

In 1958, The Australian Cinematographers Society was established to:

- further the improvement of cinematography in all fields and give due recognition to outstanding cinematography performed by Australian cinematographers,
- keep members abreast of new and emerging technology, new equipment and ideas through meetings, seminars, screenings and demonstrations,
- provide a forum for cinematographers to meet with other members of the industry to discuss and exchange ideas, promote friendship along with a better understanding of each other's role in the industry.

I often take a moment and give thought to what the industry and the ACS mean to me personally. I remember when I first went to the "pictures", it was as a 5 or 6 year old, living in the north of Tasmania at a little place called Sandy Beach. The only picture theatre was a long bus ride with mum to Beaconsfield, which was on the way to the big smoke, Launceston. There was a cinema there, and the building still stands today. That was when I first experienced a moving image on a large screen. This was around 1955 and the show consisted of two cartoons, two serials and a Feature film. I cannot remember the film, but the serials were *Tom Mix and his famous horse Tony*. Tom Mix was a cowboy hero, who faced death at the end of every screening, but was very much alive the following week. How could that be, I wondered!

These were fantastic times and hold great memories for me. The audience was allowed to smoke, noisy kids ran around, there were ice creams, chocolates and cordial at intermission, usually sold by a kid in a funny white hat from a wooden tray. You could have a feast for sixpence! Now I'm really showing my age!!

Right from those early days, I was hooked. When we moved to the mainland, Melbourne, my interest increased. The first film I remember seeing was at the Murrumbeena Picture Theatre. It was *Old Yeller*; it was absolute magic, full colour, and I could escape into this other world for an hour or more. It was around that time I started to notice the letters ASC and BSC after a person's name. I was not sure what they meant at that time, but I soon found out.

I went to Myer and bought a Lumicon 8mm camera, with money I earned from my paper round I think it cost around 2 pounds, and I started making "little dramas". I still have that camera today.

When I finally got into the industry in 1965, I was working with a wonderful cinematographer and true gentleman, Dudley Robinson, who took me along to an ACS meeting. I joined up straight away as a Student member. If my memory is correct, David Eggby joined at the same time. Anyway, I was 16 and I was on the way, so I thought.

What has transpired from those early days is nothing short of remarkable. Here I am still working in an industry I absolutely love, doing something that makes me pinch myself every day to make sure it is not a dream. "A little emotional, big fella !" I hear you say, but it is true and to now have those letters ACS after my name and add to that, to be the National President of the ACS, is a young boy's dream come true.

Take a minute and reflect on, not only what you've achieved and what you've done, but the manner in which you've done it. I do, every day and I always conclude that this industry, this Society, the people you meet, the friends you make, the collaborations, the sheer enjoyment and exhilaration of being part of a creative team, seeing what you've done on the screen, understanding the importance of sharing your knowledge…it is the best feeling, don't you think?

Until next time….

Ron Johanson ACS
National President

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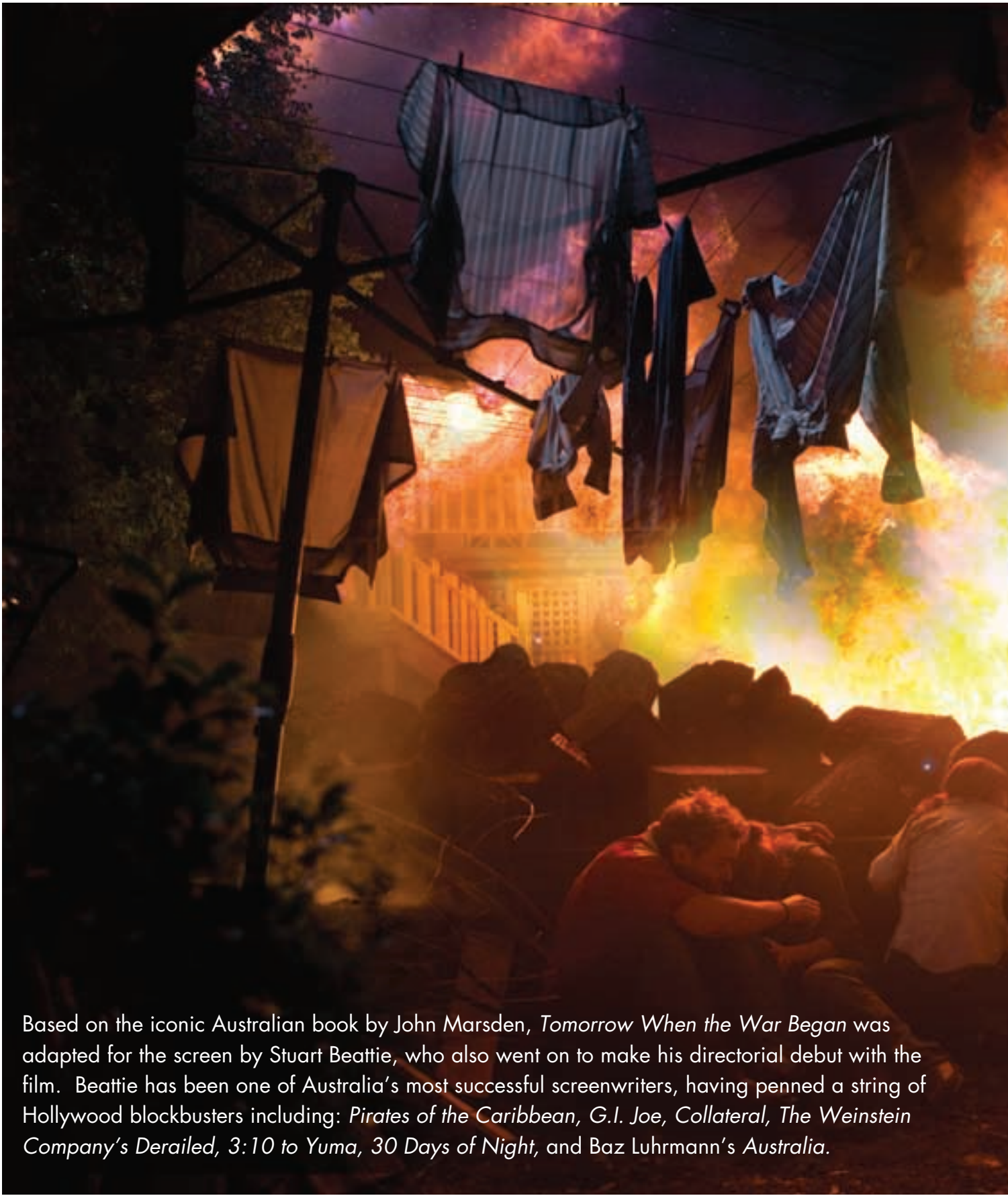


Based on the iconic Australian book by John Marsden, *Tomorrow When the War Began* was adapted for the screen by Stuart Beattie, who also went on to make his directorial debut with the film. Beattie has been one of Australia's most successful screenwriters, having penned a string of Hollywood blockbusters including: *Pirates of the Caribbean, G.I. Joe, Collateral, The Weinstein Company's Derailed, 3:10 to Yuma, 30 Days of Night,* and Baz Luhrmann's *Australia*.

WHEN THE WAR BEGAN

BY TONY LUU ACS

Director Stuart Beattie lines up a shot

For Beattie, the decision to make his directorial debut with a much-loved novel was an easy one: "I was instantly attracted to this project because I was looking to make a character-based but commercial action movie set in Australia that could compete on the international stage. *Tomorrow When The War Began* has all the action, but also has the heart. The main heroine Ellie and her friends are all wonderful, complex, engaging characters who make the ride worth so much more than the price of admission."

The film follows the journey of 17-year-old Ellie Linton (Caitlin Stasey) who, stuck helping her parents on their country farm, plans an adventurous camping trip with a group of friends to a remote vegetated sinkhole located in the bush that the locals have ominously dubbed 'Hell'. During their weeklong stay, the outside world becomes a distant memory – until a several squads of low-flying jets make an unexpected appearance in the night sky.

On their return to town, the seven teenagers soon discover something is amiss; power to the town has been cut, pets and livestock have been left dead or dying and, most alarmingly, the local showground has been turned into a prison camp and the entire population of Wirrawee is being held captive by a foreign military force.

When the hostile armed forces become alerted to the presence of the teenagers, Ellie and her friends band together to form a group of guerilla fighters who escape, outwit and strike back against the mysterious enemy that has seized control of their town and imprisoned their friends and loved ones.

Producer Andrew Mason, whose credits include *The Matrix* trilogy, *Scooby-Doo* and *Kangaroo Jack* describes the film as, "a big, bold story that needed to be a big, bold film." Adding, "It's not big budget in terms of the sort of movie it aims to be, because it flat out aims at a teenage audience and they are used to seeing *Iron Man* and *Batman* and *Clash of The Titans* and *Lord of The Rings*. They're used to seeing a lot of big things on screen so if you want to compete you've got to find a way to give them that value." In order to achieve the Hollywood commercial look in an Australian film, Mason turned to Milli Award winning DOP Ben Nott ACS.

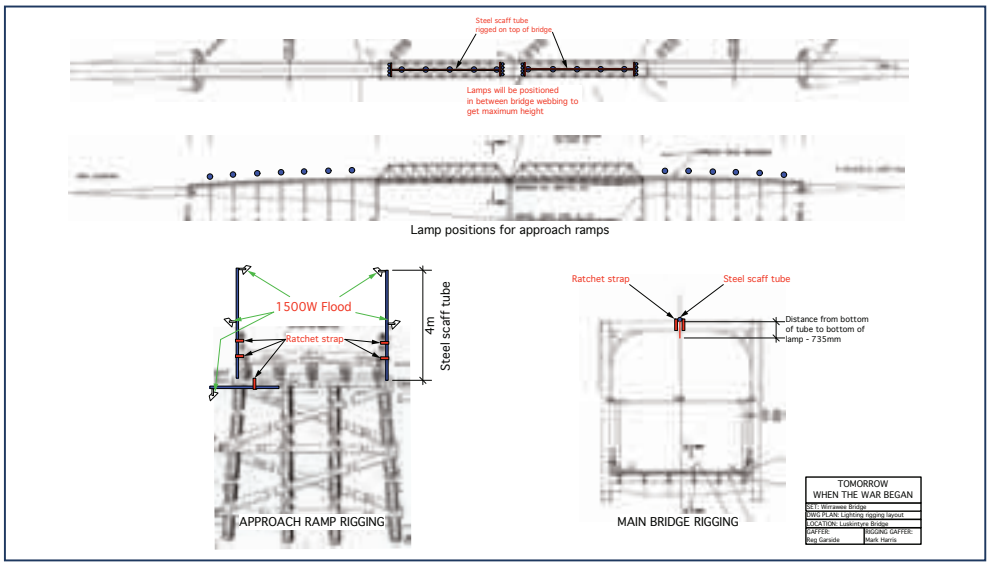
In Ben's fifteen-year career as a cinematographer, he has consistently produced work of the highest quality across all genres, having garnered two ASC nominations and one win, an Emmy nomination, and a haul of ACS Awards. The cameraman's credit list extends to *Accidents Happen, Daybreakers*, the Ridley Scott-produced mini-series *The Company, Nightmares and Dreamscapes: From the Stories of Stephen King*, and *The Lost World*, among others.

Nott was immediately drawn to the project saying, "This was a chance to work on some iconic Australian literature that had been adapted into a wonderful screenplay and it was also a chance to work on some material that my kids can identify with and will enjoy and relate to as Australians. I consider myself to be lucky that I am a part of the team that brings John Marsden's literature to the cinema. I only realised how lucky when I saw my 14-year-old niece's eyes light up when I told her I was doing the job. She and her peers are fanatical about the books and I am now officially their hero!"

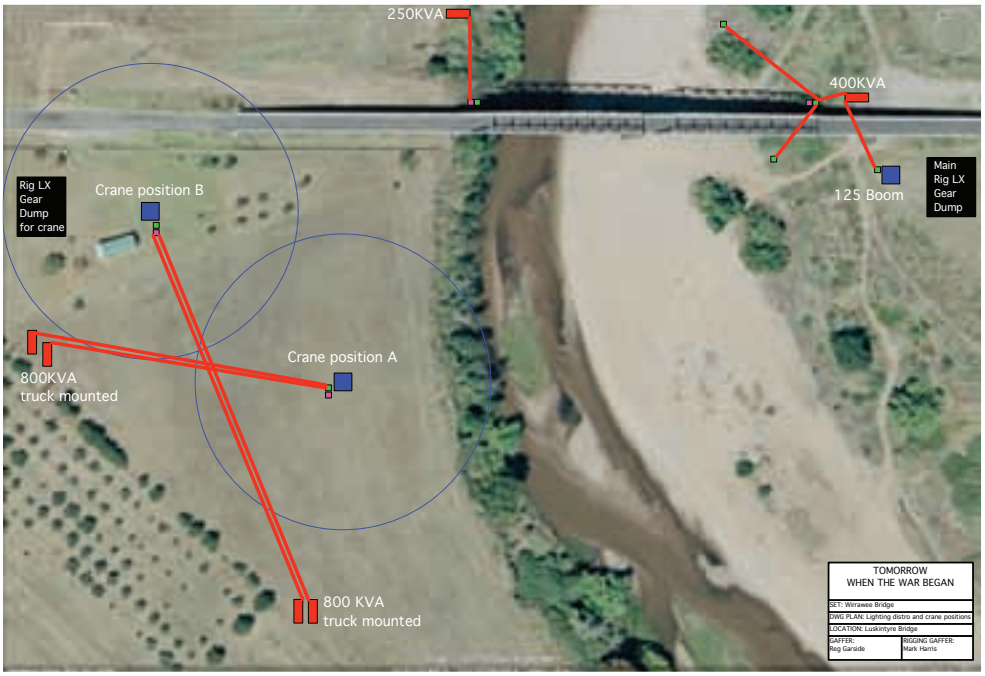
Nott's background in American drama gave him a grounding that perfectly suited the intention of the director, and the team formulated a strong and clear direction for the look of the film. Ben explains, "Stuart wisely surrounded himself with experienced filmmakers and welcomed their input. I asked him to prepare a brief that outlined his vision for the film. This document made clear Stuart's intention to continue in the vein of his blockbuster screenplays and bring a slick commercial Australian action movie to our screens."

Ben adds, "The photographic philosophy of this film was to create an American-esque action film but with Australian content. So we approached this film the way that you would shoot an American action film, which basically meant that we were very keen to have a kind of heightened sense of reality. This film was photographed with a keen eye to maintaining contrasts and colour saturation and with a richness that really looks like a large budget film. I was definitely looking at the big picture when considering the look for *Tomorrow When the War Began*. Ambience Entertainment's intention is to make the first three books in the Tomorrow series into films and with this in mind I had to consider the look of the first picture in the context of the trilogy. The photography in the first act is designed to embellish the uncredited lead actor - the Australian countryside."

With the rural setting being an integral part of the film, the production was shot on location around New South Wales with the majority of filming taking place in the Hunter Region north of Sydney. Producer Andrew Mason notes, "The Hunter Valley gave us the huge advantage of being within easy driving distance to Sydney, as well as having a lot of large centres in it to provide accommodation and support and having a lot of really wonderful landscapes, but also things like great looking bridges and good rivers. The Dungog



This plot designed by the electrics department details the rigging of skypans and 100 QI fixtures to an existing bridge superstructure



The electrics department used google maps to plan the position of cranes and generators for the Herron Bridge scene, shot on location in the Hunter Valley. In total, a 200 tonne knuckle was used

A 1/6 miniature of the Herron Bridge was rigged with miniature replicas of the practical lights used on the location bridge. The miniature was eventually destroyed by the SFX team.

Weary of lighting the Herron Bridge only with moonlight, Nott chose to light the bridge with practical QI fixtures and skypans.

Showground turned out to be exactly the right size and scale and so we ended up taking Dungog as the central reference for the town of Wirrawee."

Nott's favourite location to shoot was in the Blue Mountains. "I had never been to the Blue Mountains before and it's an incredible Grand Canyon-esque kind of landscape that literally takes your breath away when you look down into it," says Nott. "The opportunity afforded to us as filmmakers to travel to those locations was fantastic and I think that was out and out the most breathtaking location."

The DOP chose to compliment the vistas by filming in 1:2.40 ratio, composing simple yet dramatic frames using ARRI Master Primes, noting their sharpness, coating and contrast profile. The camera package consisted of ARRICAM ST and LTs and an ARRI 235, which were provided by Panavision Sydney. Although Nott has shot with various electronic cameras on past projects, he chose to shoot *Tomorow When the War Began* on Eastman Kodak 5201 50D and 5219 500T. Ben says, "I shot on film because of the importance of portraying the Australian landscape in its best light in the first act. We shot 90 per cent of the film on location and much of that was day exterior. I did extensive testing with both Kodak and Fuji emulsions but Kodak won out because it displays less noise in the blue layer. This was important because night exterior blue moonlight was going to be a big player in the film and also because Chris Godfrey's visual effects department preferred to use bluescreens, most of which were photographed on the 500T."

Nott alludes to the differing onset practices of shooting on film as opposed to digital, explaining, "I felt it important to be next to the A camera to provide support to the director. In my experience, shooting on HD and the subsequent emphasis on monitoring removes the DOP from the nucleus of the set. When shooting HD I find myself lighting via the monitor and invariably set up camp in a tent somewhere down the end of a black umbilical cord. I find the communication with the director, first AD, operator and other HODs loses tactility - so much is said without exciting the vocal chords."

In any large-scale action film there are always many logistical problems to be overcome in creative ways, and *Tomorow When the War Began* is no different. Nott was confronted with deciding how to light a huge exterior night-time action scene that forms the finale of the film. The complex 10-minute scene, set around a 200-metre long bridge, involves a gun battle, a cattle stampede, a burning petrol tanker and a huge explosion. The cameraman devoted one week of his eight week pre-production solely to the planning of this sequence. "Due to the size of the set and budgetary considerations we had to shoot out all angles that shared the same direction on the same night," says Ben. "In addition we had to collect specific foreground and background VFX plates. First assistant director Phil Jones allowed six nights on the Hunter Valley location. Between us we dissected Stuart's storyboards and built a shot list for each night. These nights were ordered around the shuffling of gaffer Reg Garside's 200-tonne crane and massive moon box and six other condors."

In addition to the conventional lights, Nott used more than 100 domestic 1500W QIs on the bridge. According to Ben, "I felt uncomfortable about lighting the bridge by just scaping it with moonlight. It would look lit. So I asked Stuart if we could assume the enemy had rigged this important strategic location with floodlights. He agreed and Reg went to work. We rigged 4-metre steel poles at 10-metre intervals on the ramps either side of the superstructure and attached two QIs to each pole – one pointing the roadway and the other spraying light out of the sides," says Ben.

The production rigged additional QIs to the underside of the ramps, pillar supports and bracing cross members where some scenes were set. Finally, 5K skypans and 1500W QIs were placed at 15-metre intervals along the box section of the bridge superstructure to create pools of light on the road surface. Ben adds, "In all it was a massive undertaking but worth it… all that was missing was a star on top and Santa would be dumping truck loads of gifts under it at Christmas!"

During the climax of the film, the teenage heroes of the film succeed in blowing up the bridge. Producer Andrew Mason explains, "There's a lot of physical effects on set, a lot of

pyrotechnics because it's a war and things get blown up, get shot at, so there was a lot of that. Our team was led by Dan Oliver who had just finished *Beneath Hill 60* and has now moved on to *Mad Max 4*. Those guys are having a good run because it's time to blow things up again - there hasn't been enough blowing things up in Australian movies for quite some time! The pyrotechnic extravaganza was handled beautifully by these guys."

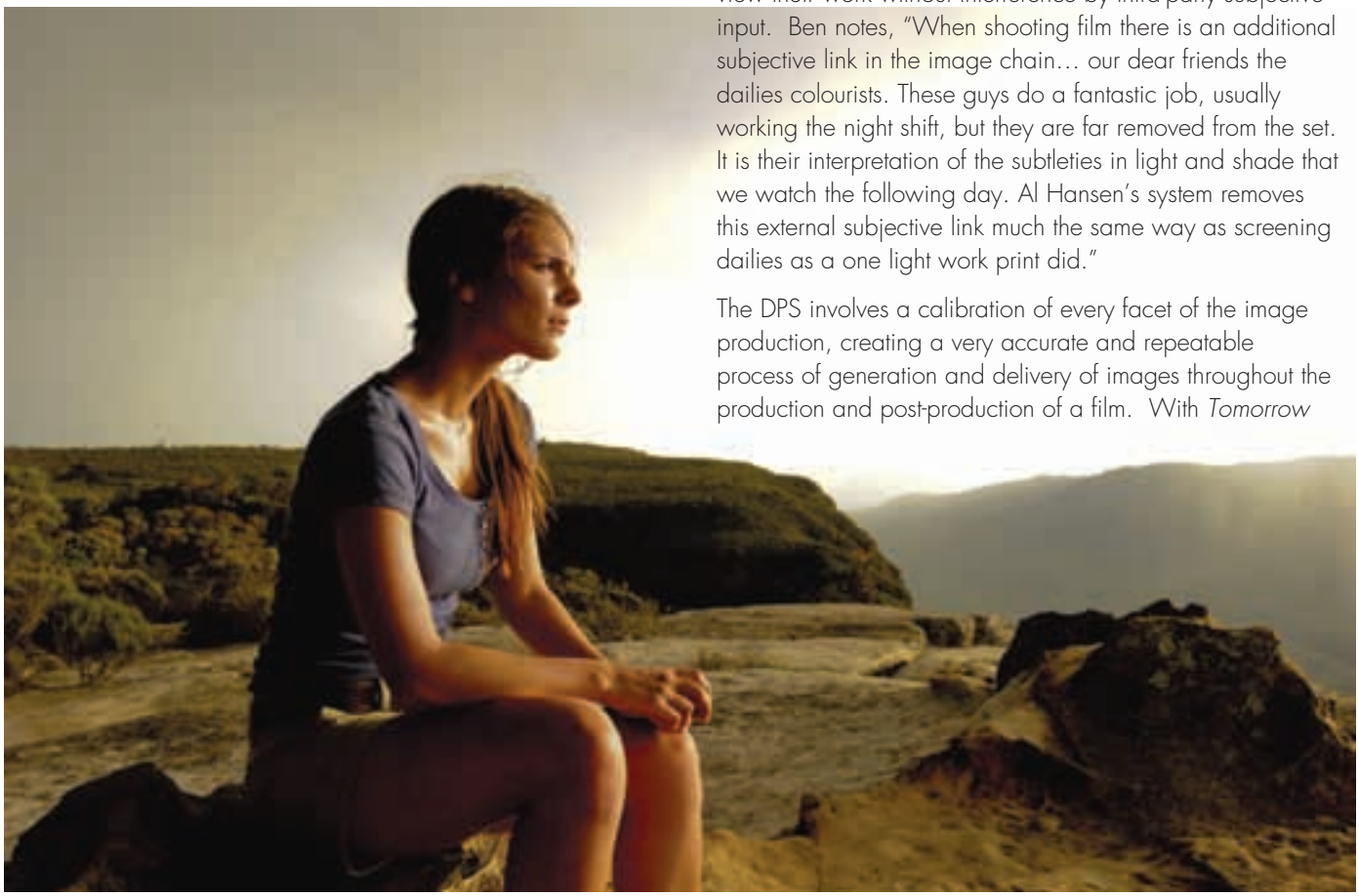
The production commissioned an exact 1/6th scale replica of the bridge to be built, which required the installation of scale accurate practical lighting. Nott states, "We had the model makers build all the prac lighting elements. They made mini QIs and skypans that lit the superstructure just as on location. Chris Godfrey and I chose all camera positions, lenses and measured the lens height on the location then his surveyor mapped their location. These measurements were then correlated to 1/6 scale of the model to give us perfectly matching perspective. We photographed these angles on location to allow Chris and his team to position the model in the real environment. The SFX guys rigged the model with explosives and used diesel fuel delivered at high pressure and naphthalene to scale the detail in the flames down to match. The final composite of all the elements is seamless and is a real credit to Chris and his eye for detail."

The filmmakers continued the 'QI light pole' motif for other exterior night scenes in order to efficiently light very large areas for relatively little cost. The poles were placed at 5-metre intervals to define the perimeter of the showgrounds that the enemy military force has converted into a makeshift concentration camp and again to ring the set of an enemy fuel depot. Ben says, "The philosophy behind the light poles was justified by the fact that the enemy would have the need for such a thing and would source these units locally. Reg rigged them all to run through a dimmer rack so we could run them at 50 per cent to warm the colour, allowing for the de-sat treatment that was to come in post."

Nott envisioned an emotional arc throughout the film that would be echoed in the photography. Ben says, "The colour pallet is rich and saturated and the camera moves quietly during the early part of the film. Post the 'foreign force' invasion I de-saturated the images and operator Marc Spicer ramped up the camera energy to mirror the developing narrative. To compensate for this de-saturation I over saturated the warm tones of street lamps and practicals and my moonlight blue so these hues maintained their colour while the greens faded away. With the trilogy in mind I was careful to not go too far with this film so the photography has scope to travel a wide arc across the next movies, heading toward the wonderfully designed stark images that characterise films like *Children of Men*."

Benn Nott ACS spoke with Al Hansen, the head of DI at The Lab during pre-production about how he wanted to approach the look of *Tomorrow When the War Began* and how they may be able to control the application of the look throughout post-production. Hansen put forward the idea of using a closed loop control system that he pioneered called the Digital Print System (DPS). DPS gives the cinematographer the ability to regain control and confidence in the integrity of the negative by allowing them to accurately and critically view their work without interference by third-party subjective input. Ben notes, "When shooting film there is an additional subjective link in the image chain… our dear friends the dailies colourists. These guys do a fantastic job, usually working the night shift, but they are far removed from the set. It is their interpretation of the subtleties in light and shade that we watch the following day. Al Hansen's system removes this external subjective link much the same way as screening dailies as a one light work print did."

The DPS involves a calibration of every facet of the image production, creating a very accurate and repeatable process of generation and delivery of images throughout the production and post-production of a film. With *Tomorrow*



Ellie (Caitlin Stasey) watches the invading force from afar in a reverent scene. The shot was photographed in the Blue Mountains.

Ben Nott ACS and Gaffer Reg Garside take a break under the soft glow of a moonbox rigged from a 200 tonne crane. The moonbox consisted of 100 par 64 globes with 3/4 CTB grid.

Nott lines up a shot on location in Sydney's northern beaches, which stands in for "Hell".

The film makers prepare a nighttime scene in "Hell". Nott used a HMI balloon to create soft moonlight

Fiona, played by Phoebe Tonkin, engages in guerilla activities under the Herron Bridge

When the War Began, dailies were transferred using a Spirit with a DaVinci desk in HD, whereas images for the final DI were scanned in 2K via a Northlight 2 scanner and graded through Baselight. To overcome the discrepancies in these two pathways, Hansen meticulously calibrated the Spirit to the Northlight so that the output of the two were practically identical. According to Hansen, "Telecine is a user-defined calibrated device so you can create looks in any direction you want. But if you run a feature film on it, you need to begin with a starting point. You need to tell the telecine where it's meant to start as opposed to a proper film scanner like a Northlight, or an ARRI, where it does its calibration off the D-min of the film. I calibrated the Spirit to the Northlight 2 scanner and gave them log dailies in video that were identical to the scans we were going to provide later in the final DI. "

Importantly, the video dailies were supplied to all departments as HD video, but in a film log form, rather than linear, thus matching the exact contrast and colour profile of the final scan for DI. The film output LUT was then non-destructively applied to the log image, so that an accurate emulation of how the final projected film would look was

L-R: Huston Chorley - Canmera Attachment, Matt Spowart - B Cam Loader, Jason Hansford - Grip, Colin Deane - Second Unit AC, Marc Spicer - A Cam Operator, Ben Nott, Jack Mayo - Truck Loader, Viliami Topui - Grip, Brook Rushton - Preview Stills, David Elms - A Cam AC, Helen Ward - A Cam Loader

available for viewing. Hansen adds, "We rolled out the LUT that I was going to use in the final DI to editorial and VFX and instead of burning it in to the files on a daily basis, I made everyone use it as a viewing tool, so that any manipulation that production wanted to do underneath the LUT could be done because their starting point was exactly the same as my starting point when it came to grade the final feature." Bob Chorly from Filmlight generously supplied two Truelight gamma boxes to the production, one for Nott to watch dailies on with the director and editor, and one at The Lab. Blackmagic HDLink boxes loaded with the LUT were supplied to other departments including the VFX vendors. A number of transform LUTs were loaded into the gamma boxes, giving Nott control of small adjustments to the image, including half stop exposure brackets, colour temperature, contrast and saturation adjustments.

During pre, Hansen calibrated each lens on each of the cameras, on each of the stocks into the system, and also

developed a series of digital filters that Ben would require on the shoot. Nott chose to use only NDs on the camera, opting for colour correction and manipulation through the Truelight boxes. The team also developed a range of predetermined exposure corrections that could be applied to the system so that Ben could make clearly defined alterations to the log dailies in preset terms. Hansen describes, "There was never an assumption by a colourist; everything was all predetermined by Ben in pre. Any adjustments were called by Ben then logged and emailed to him daily. He was in complete control of every facet. That gave Ben the confidence that the dailies were going to match the scans in the DI for the final grade. There was no external creative input into his dailies - all the creativity came from him."

Hansen adds, "I would get my turn when it came to the DI".

This type of control was available to Nott on his recent films like *Daybreakers,* which was shot on Genesis. According to Ben, "One of the pleasing facets of shooting HD is the monitoring. When watching a Grade One monitor where the appropriate Look Up Table (LUT) is applied inline, the DOP is in total control of the subtleties of light and shade and confident in his/her decision." This was the first time that this level of control was extended to Ben for a film shoot, and it allowed the cinematographer the opportunity to be very accurate with his exposures. Ben explains, "In no time I was nailing the exposure and had little need to make adjustments but it was great to have the gamma box for the occasional miss. This forced discipline on the DOP produced dailies that were better exposed. The density of images flowed more evenly from shot to shot in the offline edit making it far more pleasing for all to watch. I can say without doubt I am a better cameraman for using Al's Digital Print System." Hansen adds, "Ben fine-tuned his craft to a point where his exposures were so accurate it was weirdly remarkable. The technical excellence is the best I've ever seen. It was only possible because of his level of professionalism and his level of experience; it was amazing to see the results."

It is of great importance to cinematographers that the accuracy of the dailies in communicating the intent of the cinematography to those watching them is maintained. "I was happy with the look of the offline," says Nott. "Considering the length of time the project spends in this mode I think it is important that the director and editor and all others close to the post process feel good about the way it looks. The added

bonus, and arguably most importantly, screenings of the offline edit to studio execs and investors look good."

DPS also allowed for a streamlining of the final grade in DI, because the calibrated grades from the dailies could be imported directly into the DI. Ben says, "The work I did with Al Hansen in pre-production paid dividends come the DI. Employing his Digital Print System meant that there were no surprises because I had been exposing the neg and viewing dailies in a very close approximation to the way the Northlight scanner provides the images to Al's Baselight console. The negative was thick and healthy with loads of information. Al's first pass smoothed out the lumps and married in the contributions of the VFX department. I then joined him to fiddle with the de-sat look. I found that working with someone of Al's calibre meant that I was at best spending a couple of days working on key shots from the different reels and leaving him to do another pass. I continually rejoined the process with fresh eyes confident in the fact that Al was minding the store." Three weeks were spent grading *Tomorrow When the War Began* at The Lab.

Nott has many words of praise for all involved with the film. "I found shooting the film an enormous challenge but also incredibly rewarding photographically," says Nott. "*Tomorrow* was my most favoured film-making experience to date. The great vibe on set was credited largely to our director who gave ownership of the making of this movie to all who worked alongside him. In addition I think it important to mention the support from the office in the form of very experienced filmmakers like Anne Bruning, Michael Boughen and Andrew Mason. There is NEVER enough money and the pressures on these guys to deliver are in a whole other stratosphere. Anne, Michael and Andrew did a great job in balancing the scales of art and commerce to give Stuart the best possible opportunity to produce a very good Australian action movie. It is no secret that the key to success is a great crew. Key grip David Nichols and gaffer Reg Garside are without doubt among the finest in the country. The gaffer and the grip control the tempo of the set. The superb technical ability of these two guys combined with their fantastic organisation and communication skills made it possible for us to not only make our days but do it in style. Joining them, another great exponent of the art of chat, Operator Marc Spicer. He and 1st AC David Elms completed the nucleus of a very fine team. David's contribution as an additional operator and his work shooting lovely atmospheric dawn and dusk moments gave editor Marcus Darcy plenty of bullets for his bazooka. In addition Second Unit DOP Ian 'Thistle' Thorburn's contribution cannot be understated. Thistle's fantastic work on the action sequences married perfectly with that of the main unit.

Nott supervises the execution of a shot from atop a petrol tanker for the filming of the picture's climax

HOUSE OF STICKS

BY JOHN OGDEN ACS

Rob Herriot as Old Charlie. Photo: Louise Whelan.

It seemed like a good idea at the time. Most everyone I talked to had endured an extremely quiet year in the film business, so instead of just waiting for something to happen I assembled a crew of talented friends who were willing to work on a short film for the love of film making rather than the chase for money to pay the bills. After all I did own a RED camera and had a worthy script that I would refine to qualify for the Screen Australia accelerator incentive. *House of Sticks* would be a 15 minute film with, so I thought, the main ingredients to make it cheaply and quickly… a cast of two and one location… and would be a valuable stepping-stone towards a feature film.

The next step was to find a cast and I began to advertise online through various avenues. I was rewarded with about 250 enquiries for the female lead, which was surprising as it involved nudity and no fee. More surprising was the fact that only about a dozen men applied for the male lead seeing they had the opportunity to bed a goddess in the story. But then perhaps they didn't read the script properly. One aspirant effused how much he loved the script and the character but when I invited him to audition he asked which part he would read for. Seeing there were only two characters and a sole male role I suggested he read for the part of Lance unless he wanted to audition in drag.

After several months of searching I was able to lock in a strong cast and began to concentrate on finding a location. I toyed with the idea of shooting around the Northern beaches to minimize expenses but kept getting pulled towards the South Coast to do the story justice. With the help of co-producer Louise Whelan I found a bed and breakfast place near Berry that was perfect. It was an 1870's cabin that had been demolished and transported to the top of Mullenberry Mountain near Berry, and then rebuilt to look over sweeping views of the coastal plain. With its layout and rough-hewn dark slab walls it was ideal for the story. An added bonus was that the furniture and fittings required little art direction, and the rental cost was reasonable.

With these two critical considerations in place, and being given set availability times for the location before winter set in, I started to lock-down the crew who had expressed interest in the project. A month or so out most of these crew were still available but the shoot dates chosen were proving popular, with just about everyone being offered well-paid positions elsewhere. After a very average year I could not expect them to stay on for the freebie. This process continued and I found myself re-crewing key positions right up to the last day before the shoot. Not the ideal preparation for getting your head sorted for the task ahead as director/DOP!

The female lead, Vanya Tuaru, required a full day of being tattooed by a team of five make-up artists headed by Marija Milisavljevic. That afternoon I dropped into Cameron Jane's make-up school in Surry Hills to take some photographs of their excellent work. I had taken some gear up to the studio and had only been away from the car for 15 minutes when a couple of locals smashed a side window of my car and stole a leather satchel with all my director's notes inside. This would prove a big loss on a shoot where there was little time to stop and think about shot lists and the like. It also meant that the two leads, Marty Dingle-Wall and Vanya Tuarau, had to drive a car without a rear window all the way to Berry on a cold night because I had to drive the electrics van while the gaffer, Ben Dugard, drove the generator truck.

That first night before the shoot we rendezvoused at the Berry Hotel which would be home to the crew for the next four nights. I had now assembled a mix of experienced crew with less experienced members and people who were moving up a notch. The concept was to have a guerilla crew to work quickly but the strains were soon all too obvious. Experienced crew had to work without assistants and Ben Dugard in particular needs to be singled out for his massive effort. With no gen-op or best boy Ben had to endure a lot of stress and managed to keep a smile in the process. Some experienced crew were working outside of the genres they were experienced in, such as moving from documentary sound to a drama set. Those crew who were moving up a notch were thrown into the deep end. I had wanted to shoot the film mainly hand-held and, even with the help of an Easy Rig (lent to the shoot by Geoffrey Simpson) the operator was under considerable pressure. The focus puller also had his work cut out. On only his third shoot in this role he had to contend with the hand-held camera and the ultra primes stuck on wide open.

I had decided early on that this would be a freebie where no-one would be out of pocket. Travel and department expenses, accommodation and food would all be covered. This meant that the choice to shoot away would double the budget, and in the reality of film-making, cost blow-outs would continue. In my low budget script I made the mistake of adding car travel scenes with dialogue. Even shooting low tech and guerilla style with no tracking vehicle or low loader, and using a 7D for hand-held dialogue shots, there was no escape from traffic controllers and other OHS requirements that put old school filming in the realm of the dinosaur. I had the added misfortune that my favourite Malibu, which was being used as a prop, was trashed after being left on the road in front of the action vehicle while a camera mount was being rigged.

Other unbudgeted collateral damage on the shoot apart from car and surfboard was my beloved and immaculate1966 Triumph Bonneville motor bike, which I sold to pay for the shoot. Lying awake the night before the shoot, counting $s instead of sheep, I realised that even before I had shot a frame I had already surpassed the revenue the bike had raised. By the end of the shoot the budget had blown out to more than double what the sale of the bike brought in, putting me well in hock to a project that had remote prospects of any financial return. While shooting pick-ups I managed to lose control of the car while driving on a rain-soaked mud road to the location, crash into a tree and trash the rear of my car including the door I just had fixed after the break-in. So much for a no-budget film.

On the technical side *House of Sticks* may well have been the first piece of drama to be shot in Australia on a RED using the new MX sensor. My camera had not yet been converted and so David Wakeley generously offered the use of his RED. The 800 ISO and better rendition in the blacks were perfect for the dark location and lack of big lights. This arrangement also freed-up my RED as a second unit camera. Interestingly, the RED software had not kept up with the MX upgrade and

Director/DOP John Ogden ACS. Photo: Louise Whelan.

I found myself attracted to the slight green caste that resulted. I am hoping to keep some of this caste in the final grade. For much of the shoot I found myself working wide open on the ultra primes generously supplied by Simon Hammond at Camera Collective. A Canon 5D and 7D were also employed during the shoot to get around problems that usually involved a bigger crew and more equipment (eg interior car tracking shots with dialogue and no low loader). Some time lapse sequences and plates were shot on my Canon 1DS and water camera footage was shot on Panasonic 202 cameras.

The cameras used on *House of Sticks* were reasonable quality given the budget, but the camera support was definitely low tech, with the exception of the digitized Kaleidoscope hot head supplied by Lestor Bishop and scorpio remote focus system supplied by Beau Sevastos (Sevaxis) to facilitate the one and only crane shot. Scott Brokate was on stand-by with his dolly but my mind was set on a hand-held look. Having decided not to operate on this production to allow me to manage the shoot, and knowing the limitations of the RED as a hand-held camera, I should have employed a steadicam to substitute the long hand-held shooting days, but a lack of budget had pushed this thought out of my head from the outset.

Martin Dingle-Wall and Vanya Tuarau were brilliant in their roles and I am thankful that we had the opportunity to workshop the script before shooting. They found themselves with a hectic workload over the next three and a half days with a director constantly distracted by producer and lighting commitments. Support actor Bianca Bradey came down with a serious stomach bug on the day of the shoot but pushed through her sickness to get all her scenes done. This was taking method acting to a new level seeing that Bianca was playing a ghost. The make-up department was spared the work required to get the pallor of the deceased.

Vanya Tuarau as Ruby in House of Sticks. Photo John Ogden ACS

Some special thanks need to go out to all those crew who worked without fee and without all the comforts crew get used to on the big ones. Many thanks to all those who lent equipment to the cause: David Wakeley, Simon Hammond, Geoffrey Simpson ACS, Lestor Bishop, Beau Sevastos, Ray Brown, Miles Jones, Matt Russell, Roger Buckingham, Ian Rumbell and Dave Roberts. Also for all those working behind the scenes such as Mason Walker, Sandy McLennan, Tim Calvert, Cameron Jane, Trish Glover, Saxon Duke, Jacqueline Pitman, Gianni Frinzi, Vasili Vasiliadis, Ashley Gilbertson, Ben Bohane, Stephen Dupont and the °South Collective.

House of Sticks is currently in post production with a team including editor Peter Barton, Nick Hartley working on the music design, and post specialists Warren Lynch and Ian McLoughlin overseeing the tail end. Despite the stresses and strains of a low budget shoot, the film is already getting attention and will be entered into the 2011 Cannes Film Festival.

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Right and left full-HD video streams can be recorded as files on memory cards, ensuring higher reliability than on other media. Eliminating moving parts helps to significantly reduce maintenance costs. Users also enjoy a fast, highly productive file-based workflow.

*1: As an integrated twin-lens 3D camera recorder capable of recording full-HD video to its memory card. As of January 2010 (based on our investigations).

*2: The point at which the left and right-camera lenses' optical axes converge. Specifications and functions are subject to change without notice.

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Simon Chapman on the set of The Loved Ones, looking through an Optimo 24-290. The cameraman used a number of slow zooms throughout the film, often into an eyeball closeup

BY JAN REICHLE

CHAPPY & THE LOVED ONES

The first credit as cinematographer on a feature length drama is a milestone for any cinematographer. Simon Chapman, better known as Chappy discusses his work on *The Loved Ones*, his first feature, which was quickly followed by his sophmore effort *Griff the Invisible*.

JR: How did these projects come your way?

SC: *The Loved Ones* came my way because the director Sean Byrne fought for me to shoot it. It was my first feature and I found it a bit tricky to get the first feature going after graduating from film school. Like a lot of us, we take the approach that the short film directors you work with eventually will make features and you hope that you'll get onboard. With *The Loved Ones*, Sean was offered to direct and 'cause it was his first film the producers might have been a little reluctant having a first time DOP, as well as a first time director. I think the fact that I'd done a short with Sean called *Advantage* that went to Sundance and because he was so loyal and fought for me to do it, got me over the line. We shot it in Melbourne at the end of 2008.

As far as *Griff the Invisible* went, exactly the same thing occurred. I had shot two of Leon Ford's short films, *The Mechanicals* and *Katoomba*. He had a fair bit of success with those and when he got the opportunity to make his first feature he got me onboard as well. Most of the key creatives on both early short projects were on the feature as well.

JR: Were these collaborators acquaintances from your days at AFTRS or from funded short films after leaving there?

SC: A little bit of both. Sean and I went through AFTRS, but he was a year above me. I didn't actually collaborate with him at film school, but when he got funding from the Australian Film Commission to make *Advantage*, he asked me to shoot it. Leon didn't go to film school at all, but I'd shot two of his funded shorts. That's kind of the way it evolved. I think that's what you are hoping for when you are slaving away and shooting no budget short films for directors and pouring your heart and soul into them, that one day they'll get to a point where they ask you to shoot something a bit bigger.

JR: *The Loved Ones* was your first feature. How was the prep different from all you had shot before in your career?

SC: The prep for *The Loved Ones* was pretty similar to the short films I had done, except I guess it was a longer timeframe. I had four weeks pre-production. All the usual rules applied, location reccies, shot listing, meetings, trying to figure out schedules with the first AD, so all of the usual stuff

that you've done on a short film with smaller scale. It's nice to have just a little bit more time to explore the options.

JR: It wasn't too daunting or different an experience?

SC: At first I thought: "Oh God how different is this going to be." I think once you get into the rhythm of it you realise you've done it before. It's just now that there are a few more people involved and obviously a bit more money. The usual restrictions apply. There is never enough time. I haven't shot a film where it's been like: "You have all the time in the world, just do what you want." Every day you're trying to solve problems and pre-production is the most important part of a shoot I think, because when you're on set you have so little time. You have got to be able to make quick decisions to change things all of a sudden. Anything and everything happens, from an actor being ill and having to shoot something else, to locations falling through, to the weather changing. All the stuff I'd experienced on shorts over the last 8 to 10 years culminated with that first feature experience.

JR: Let's talk about the shoot. How many days did you have on each project?

SC: They were both 27-day shoots, five-day weeks plus a couple of extra days, not a lot of time. Both projects were ambitious: *The Loved Ones*, was a horror film and *Griff the Invisible* was a super hero love story; two very different genres. I naively thought that the romantic comedy wouldn't be as challenging as the horror film because with the horror there's so many effects, elements, and prosthetics. I quickly realised that *Griff* had its own unique set of challenges. The director was pretty keen to do everything in camera; he didn't want to rely on visual effects. That adds a little more pressure to the day, but the approach works for the look of the film. Very different genres, very different stories, but both were equally challenging.

JR: Tell me about the look of the two films. How did you approach the two different worlds and what tools did you use to get there?

SC: The brief from Sean for *The Loved Ones* was that he wanted a glossy look to it, something, which wasn't stereotypical horror, and I'm talking about the desaturated grungy look. We wanted to go the opposite way. The designer and Sean created this heightened teenaged girl's obsession with boys who reject her. She's living like a 12-year old, still into Barbie and all things pretty and nice, but she's a psychopath. We like the contrast between the psychopathic teenage girl and presenting it in a colourful glossy way. That decision led us down the digital pathway. RED was reasonably new, at Build 16 stage. We tested the camera with a set of Cooke S4s and had a look at the 2K DI and were really impressed. We wanted to frame for 2.35:1 and it just seemed to work. We didn't test any other camera, because it worked both financially and for the desired visuals.

JR: Was film out of contention from the start?

SC: Film wasn't an option from the beginning. We were all keen to explore digital and RED had been around long enough for us to know that the results were quite good. We decided that digital would suit the slightly hyper real glossy look that we wanted for the film, as opposed to *Griff the Invisible*, which was very much: "This is only going to be film." The director and producer were very adamant that they wanted the texture of film and in particular 16mm, probably picked over 35mm due in part to financial reasons, but were definitely not afraid of having a slightly less clean image. It worked for the story and brought a little more of a handmade quality to that film. Two very different approaches, but I think the bottom line is choosing the right format for what you are putting on the screen story wise. It's been interesting comparing the two, from the shoot day through to the post and how they are so different.

JR: How was it going from RED, where you have the HD monitor and your waveform back to just using and trusting the meter?

SC: With *The Loved Ones* we could see the image we were getting, which was great. Everyone likes that; the director knows what they are getting, my gaffer could see what we are doing, quickly judge and assess. We had immediate rushes clearance; all are advantages of that format, whereas 16mm was back to the meter and trusting your eye more than trusting a monitor, so I really enjoyed looking through the viewfinder and not relying on the monitor. Obviously you don't know that it's all there until you get the rushes back and there is that slight panic I think we all have. I really enjoyed lighting by eye and feeling a scene more than just relying on the crisp image. There were times we were shooting at night and 16mm splits being the way that they are, we couldn't see an image. I was on a hot head crane shooting characters dressed in black against black streets at night and relying on little lights in frame to tell me where I was. At that point I was really missing having the high def image and knowing exactly what I was getting.

JR: What emulsion did you opt for?

SC: Fuji had a brand new stock 500T Vivid and after testing it we all agreed it was fantastic. It was so colourful and bold with incredibly rich blacks. It suited the 'comic book' style we wanted for all the superhero elements. Everyone told me to stay away from 500T if you are shooting 16mm for theatrical, but I thought to myself: "They want to shoot film, let's just shoot on film and it's going to have grain, but use the emulsion for what it's capable of doing and not rely on the grade to create the look." It felt bolder than when you are shooting on a digital format, where you know how it is sitting perfectly, but with film there is a little bit of the unknown, which is quite nice.

JR: Did you have any other emulsions?

SC: We shot about 70% on the 500, for all of the night scenes. We shot Eterna 250 Daylight for all the day exteriors

Chapman, 1st AD Brendan Campbell and director Sean Byrne shoot multicam, with a second camera on a jimmy jib

and interiors. Those were pretty much the two stocks that we used. I had planned to maybe use a slower speed stock, but in the end we were shooting in alleyways and spaces that didn't have a lot of sunlight, so I definitely needed that speed. I overrated everything by 2/3 of a stop. With the RED we just rated it at 320 and went with that.

JR: What were your lens packages on the films?

SC: A set of Cooke S4s and an Angenieux Optimo 24-290mm was the kit on *The Loved Ones*. On *Griff* it was a set of Zeiss Ultraprimes, no zoom.

JR: Let's talk about the post side of the imagery.

SC: The negative on *Griff* was scanned at Frame Set & Match to 2K and Billy Wychgel was the colourist. It works well. On the RED we shot at 4K and worked at 2K in the grade at Digital Pictures. Both were graded on the Baselight system. Right off the bat you look at your 16mm 500T blown up and you're seeing noise. I'd just finished *The Loved Ones*, which was clean. I like the fact that *The Loved Ones* on the 35mm print has a little bit of grain, it takes off the edge. They are very different looking films, which I quite like. I don't feel like I've just got the one look. There's no doubt that the cleanness and resolution of the RED are impressive, considering the price of the camera. You can only imagine that it's going to get better and better. I did feel that with the RED my overexposure was very critical and there were a couple of scenes where things have clipped and you can't do anything about that. But with film, even the 16mm held the highlights so much nicer. A hot white shirt had a nice glow rather than a hard peaky video look. So there are those advantages and disadvantages of the formats.

JR: How did you challenge yourself and progress on these two projects?

SC: I guess on *The Loved Ones* I wanted to survive the shoot. The first couple of days were tricky, because it was getting into the rhythm of it. "I do know what I am doing, it's not the first time I have shot something." After having seen some of the first days' rushes, where everything was working, I certainly started to get a lot more confident. As it happens, you build a relationship with everyone, you feed off people's ideas. With *The Loved Ones* it was a big learning curve, because I just had to trust my instincts and what we had planned. What we were doing was working and people were really happy with the way that it was looking. That allowed me to keep pushing it a little bit more everyday and start to analyse how the RED handled, what it could and couldn't do. For both projects it would have been nice to have a larger testing period. I had a day on each film and that's not only testing my own lighting and camera stuff, but also squeezing in wardrobe and make-up tests. It's just not enough time.

JR: How has your relationship with the two directors progressed over the course of the two shoots?

SC: I had a relationship with both directors from the shorts

we did, but obviously when you're on a feature together and working that hard so closely for such a long period of time things change. You're going through the whole emotional rollercoaster and physical exhaustion together, so after a little while you can pick when each is having their highs and their lows, or when someone is feeling really sluggish, so you have to pick them up and vice versa. Both directors are great in terms of collaboration and I think as far as on set presence, they are quite inspiring to everyone around them. It makes you want to do great work. Certainly, my relationships have progressed and hopefully there will be other projects together. It's such an intense relationship that you've got to be able to be a human being as much as a technician.

JR: So now that you have two under your belt, how has it changed your course for the future?

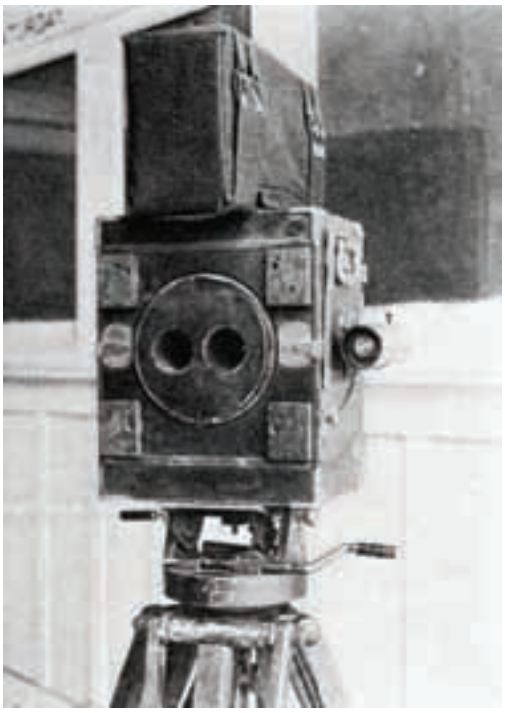
SC: Ultimately I hope that both films are successful. I hope that audiences enjoy them and that they work as complete films. Both are very different. Ultimately it would be great to know that you have worked on a film that people have really enjoyed. When I went to Toronto with *The Loved Ones* I had some general public show their appreciation. It was quite a nice feeling to actually know people have enjoyed it after all that work. When you are on set sweating, trying to get it done you are just not sure whether anyone is going to see this and enjoy it. So few films are successful. For everyone involved I hope the films do well, as it will mean that the director, producer and all of us who have worked on it can further our careers, secure another film and continue shooting stuff for a living. That's the ultimate goal. Even though they are hard work, it's so nice to be working on something where everyone has got a passion for the project, rather than just: "We have got to get this shot for a client. We are going to make a bit of money." There is something quite seductive about drama.

Lola (Robin Mcleavy) and Daddy (John Brumpton) dance under a mirrorball in the main farmhouse set of The Loved Ones

3D OR NOT 3D

BY PHIL MÉHEUX BSC

First a little history: As we know, 3D films have been around a long time. The earliest confirmed 3D film shown to a paying audience was *The Power of Love*, which premiered at the Ambassador Hotel Theatre in Los Angeles on 27 September, 1922. The camera rig was a product of the film's producer, Harry K. Fairall, and cinematographer Robert F. Elder. It was projected dual-strip (two projectors running in synchronisation) in the red/green - anaglyph - format, making it both the earliest known film that utilized dual strip projection and the earliest known film in which anaglyph glasses were used. Reviews at the time suggest that Fairall used tinted prints to get the red and green imagery. After a preview for exhibitors and press in New York City, the film dropped out of sight, apparently not booked by exhibitors, and is now considered lost. Fairall's camera, shooting two negatives simultaneously, is pictured right.



Fairfall Camera

Ten years later, in 1932, while attending Harvard University, Edwin H. Land conceived the idea of reducing glare by polarizing light and introduced the Polaroid J Sheet as a commercial product. While his original intention was to create a filter for reducing glare from car headlights, Land did not underestimate the utility of his newly-dubbed Polaroid filters in stereoscopic presentations.

In January 1936, Land gave the first demonstration of Polaroid filters in conjunction with 3D photography at the Waldorf-Astoria Hotel. The reaction was enthusiastic, and he followed it up with an installation at the New York Museum of Science. It is known what film was run for audiences with this installation. It was sporadically used in documentary or commercial road-show presentations.

3D had a renaissance in the 1950s when Hollywood embraced it again after the success of *Bwana Devil* [1952].

At MGM Studios

This film was shot with two film cameras simultaneously using a prism in order to get the distance between the "eyes" as natural as possible, making a very bulky piece of equipment using predominantly Mitchell bodies.

You then needed two timed prints and two projectors in the cinema to run the film in synchronisation to get the 3D effect using polarized glasses. Added to the costs were editing, neg cutting and post-production as well as two finished prints representing each of the "eyes" – effectively doubling your distribution costs. There were also instances of substandard projection, which promoted audience dissatisfaction with the system.

This was no doubt made worse by the fact that none of the mainstream directors of the day were attracted to it. Hitchcock made *Dial M For Murder* in 3D but believed that the 'gimmick' distracted audiences from the drama and suspense. M-G-M made *Kiss Me Kate* in 3D but decided it added little to its success, as did most critics of the day. Cinemas that were equipped were few and far between and the bottom line for many studios was the last figure on the balance sheet.

Then along came digital capture and presentation and it wasn't long before film technicians realised that a 3D digital capture set-up would be smaller and lighter than two film cameras and therefore more user friendly but more importantly, screening digitally removed the need for two equally perfectly timed prints running in synchronisation – in fact both images come from the same source.

In October 2009, I was invited to join the crew of *The Smurfs* for Sony Pictures Entertainment and their subsidiaries: Sony Pictures Imageworks and Sony Pictures Animation. To make a film with live action settings and actors, together with computer animated characters i.e. *The Smurfs,* with the intention of producing a 3D release. In the weeks leading up to the start of prep there was a lot of angst over how to shoot our motion picture. Since the phenomenal success of *Avatar,*

the studio could see dollar signs releasing a 3D picture – well, they hope!

The problems with shooting 3D of sufficient quality are cost, crewing and manoeuvrability. In 2009, I was sent to see 3Ality Digital in Burbank, California, one of the leading players in the burgeoning 3D camera rig market with a number of successful productions to their credit, including *U2 3D* and several televised sports games.

I was shown a rig with two Sony F900 HD capture boxes (not using the whole camera – just the recording chip – pictured right.)

Both 'cameras' have zoom lenses, which are matched by computer technology to focus, zoom and change aperture in synchronisation. Obviously the operator can only view one camera output but both cameras, in 3D, can be seen back at base with a flat screen monitor and a pair of Polaroid specs.

Thick cables come from the zoom lens controls and each recording chip back to the rest of the camera stashed out of sight, as are the control boxes for the lenses and stereoscopy. The mirrors allow the convergence to be adjusted for each set-up. Simply put, the convergence point is the point at which the left and right cameras' optical axes converge to produce 3D images. To take natural-looking 3D video, the convergence point needs to be adjusted to match that of a human's eyes, whose convergence point varies according to the closeness of the objects being viewed. By allowing the convergence point to be adjusted for each shot makes for easier viewing of the final image, and better quality 3D, something that the early 3D film cameras were unable to do. It also means that after the shoot, you can change the convergence because each camera records a separate image, which can be manipulated 'after the fact' if necessary.

Changing lenses is time-consuming and the rig is somewhat a cumbersome affair although it has been successfully used with Steadicam and on a crane. However, this rig has some shortcomings when it comes to screen resolution especially for a 2:40 to 1 presentation and so companies are now looking at better quality cameras, which are heavier and more cumbersome. Inevitably, it can take longer to get the set-ups and thereby elongate the schedule and the crew on average is increased by 30% and that then starts to make the studio anxious in terms of costs.

Avatar was enormously successful but according to reports it took almost 4 years to complete at a budget of $450 million with Cameron often reshooting whole sequences that didn't work in 3D; frightening statistics for an average family movie. However, with the exponential development of computer-generated imagery, it wasn't long before some geek realised that you could create a 3D effect using a computer. Although time consuming and therefore still expensive, it was considered less troublesome that actual 3D photography and a number of pictures have been done this way. This gets over the clumsiness of most 3D rigs and allows fairly normal shooting and crewing.

The whole idea of shooting 2D and making a 3D conversion was becoming more pleasing to our backers. However, our

3Ality Digital Rig

Producer, Jordan Kerner had read a review of *Clash of the Titans*, where a reviewer said, "…the film has been drawing fire ever since it became apparent that [… it] was getting the quickie 3D conversion treatment, making it look like Warner Bros. was exploiting the explosion of moviegoer willingness to pay an extra $3 bucks to see big-screen extravaganzas in 3D."

Another reviewer wrote: "I will be completely honest – it did not look great. It looked passable. … To me, the live-action post-converted 3D footage looked very unnatural. At times the characters appeared to stand out like cardboard cut-outs, while other times they appeared to be graphed to a computer-generated 3D model, and it just looked odd. The computer-animated elements look a little better, but as a whole it was a subpar experience."

To try and allay his fears, I suggested: "Why don't we shoot in 3D?" Of course, that didn't cut any ice with the studio. At a pre-production meeting, the Vice-President of production stated quite unequivocally, "Let's get this clear; we will not be shooting 3D for any part of this movie, that's out of the question and off the table!"

After many discussions with the Visual Effects supervisor and the VFX houses, it was agreed that *Clash of the Titans* had been a hasty adaption without any preparation as the film was not intended for 3D when shot and that our movie would be significantly better by adopting certain rules and approaches.

The first advantage our movie had was the leading characters themselves, *The Smurfs*, they would all be computer-generated and therefore once "built" inside the computer it was relatively easy to make them look three dimensional.

We were shown the pros and cons of planning with excerpts from *G-Force,* another film that involved CGI characters

They put this together for a test because we asked for something with more resolution

but converted "after the fact" and some shots from *Alice in Wonderland* a 2D conversion that had been planned as such and did extremely well at the box-office. The major factor to converting 2D to 3D is EVERY shot is a visual effect – each layer in depth needs to be separated from the background by rotoscoping or matting. But added to that, when an actor or object is seen in three dimensions, each of your eyes sees a different area of background behind the object in front of you, but shooting in 2D this 'extra' background is not visible, so there are a number of guidelines that can get you out of trouble and make for a better result:

- For every shot, shoot a clean plate of the background even if the camera is panning, tilting or hand-held. Then the 'missing' background can be added from the clean plate.
- Avoid foreground objects that have soft edges (e.g. wispy hair) as they are especially difficult to separate. However if the background is soft, the resultant matte extraction can be achieved with a difference matte but this all adds to the time and therefore cost of conversion. This means choosing hairstyles (and for that matter actresses) where the hair is predominantly close to the head and not "fly-away". A bald head suddenly becomes more attractive!
- Motion blur: normally this would not be an issue in 2D – like an actor or object moving fast or a stuntman falling over a chair or table. But with separating elements from the background, this could be an issue. A separate take is made with the shutter angle reduced to 90 degrees where possible. Obviously if you were breaking glass or crashing a car, VFX would have to accept the original take and CGI technicians would have to do their best unless you had prepared the shutter angle accordingly in advance. Motion blur can then be replaced by a 'smoother' effect after the shot has been processed.
- Avoid costumes with see-through fabrics or loose flyaway elements like fringes and particularly anyone with a wide brimmed hat – Western style. As they talk, the brim moves up and down and one minute you see under the brim and another minute you see above the brim. Creating a 3D effect after the shoot is tricky. So, Western-style hats were out.
- Reflections in glass. This was the toughest one to deal with: If you have an actor looking out of a window – say a car window - to the outside, it is normal for there to be a reflection of the outside superimposed over the face of the actor. Sometimes the reflection is part of the storytelling. However, the computer can't automatically work out where the planes of action actually are – it tends to see the reflection and the face as one element – it can't separate the reflection from the face behind it or it produces a 'flat' image with no depth. One way round this is to shoot the actor with the window reflecting black drape and then after the good take, reposition the black drape inside behind the window and shoot the reflection separately and combine them later but this does bring up the problem of camera movement and hand holding which is to be avoided. If you needed to pull focus from the reflection to the actor, it is best to shoot the reflection sharp all the way and let the CGI operators make the focus change. A major issue in our film was a tracking shot of an actor walking down New York's Fifth avenue with all the shop windows but in this instance it was agreed that the reflections and what was inside the shops could be seen 'flat' without any loss of drama. I did experiment with shooting 2 Genesis cameras side-by-side for situations like this but it was thought to be cumbersome, time–consuming and of no particular help, so we ditched that idea. The problem of glass reflections also came up on our studio-built set of an apartment with windows looking out onto a translight, particularly for night scenes – so, we tended to make the excuse in our story that it is very hot and humid in New York and the windows are open! If there were any sheer curtains, we would also shoot the clean plate without the curtains, which have to be treated like glass in a way – in fact anything that is transparent.
- Reflective objects should be avoided like shiny black plastic floors, glass in kitchen cabinets, chromium kitchen appliances, mirrors, etc., as the same problem as with glass can affect you.
- Translights or backings. They don't have any inherent third dimension, being as they are 2D paintings or photographs. So these need to be chosen carefully and if they are very out of focus – say in a tight close-up - it is better to shoot the clean plate soft without the actor as it was and then sharp (or sharper) so that the computer technicians can make the 3D conversion on the backing using the sharp version and throw it out of focus to match the original version.
- Atmospheric elements: rain, smoke, snow, dust, fire. The consensus was to shoot without the element and add

it later; however, a lot of cinematographers - including me - find atmosphere smoke a very visual-friendly effect particularly in low key environments – it's sometimes a very simple way to add a feeling of mood or mystery to a scene but in a 3D conversion you have to say goodbye to smoke because there is no way you can separate the different layers of something so fine. This also applies to things like flames in the foreground or snow falling – it would be inconceivable to have a technician rotoscope each individual flake of snow or lick of flame!

- Other general 3D issues are: watch out for foreground objects that may not be the subject of the shot. In general a foreground object will, even for a brief moment, distract the viewer from everything behind it. So, if you have a mid shot of a character getting into a taxi as someone's P.O.V., better not to have extras walking or objects close to the lens between the scene and the camera. This applies to tracking behind out of focus foreground objects – something that some directors and operators are especially fond of. These can distract an audience.
- Another 3D issue is: avoid unusual and extreme camera movement like running hand-held or on a boat in rough water as this can induce nausea in the audience.

Given all of that, I am still not convinced that 2D conversions are significantly cheaper than the real thing. Half of our budget went on shooting the live-action part of the movie; the other half was allocated to the VFX putting us over the $100 million mark. However, you could argue that because over half of our story involved CG animated characters, to shoot in real 3D might have been an extravagance. Who knows?

As yet the movie I shot is very much inside Sony Imageworks. For the record, we used a Genesis camera with Primo lenses recording onto SSR tapeless magazines because this allowed a more direct route out of the camera into the CGI computers. On occasion we used the Iconix Lipstick Camera which records in HD and proved very compatible with everything else.

You can see the results of our efforts next August 2011, when *The Smurfs* is scheduled for release.

The last word from the doyen of US Film Critics, Roger Ebert referring to *Clash of the Titans:* "Explain to kids that the movie was not filmed in 3D and is only being shown in 3D in order to charge you an extra $5 a ticket. I saw it in 2D, and let me tell you, it looked terrific. Split the difference: "We see it in 2D, I save five bucks, and I increase your allowance by $2.50 this week."

Phil Méheux BSC is a former President of the British Society of Cinematographers, whose credits include *The Long Good Friday, Highlander II, Golden Eye, Mask of Zorro, Entrapment, The Legend of Zorro, Edge of Darkness, Casino Royale* and his latest *The Smurfs*, among many more. David Wakeley ACS was DOP 2nd unit for Phil in 1993 on *Escape from Absolu*m and David Burr ACS, DOP 2nd unit for him on *Beyond Borders* in 2000. Phil is an honorary member of ACS Queensland.

ELEPHANT WHITE

Muller

BY SOPHIE TANG

A wealthy businessman contracts an assassin, Curtie Church (played by Djimon Hounsou) to avenge the murder of his daughter by slave traffickers in Thailand. A merciless Church exterminates gangsters by the dozens with the help of his paranoid, but hilarious weapons supplier Jimmy (played by Kevin Bacon).

Paid per head Church moves in hard and fast through the shady corners of Bangkok, using all forms of destructive heavy artillery and bone crushing Thai fighting to rack up a mountain of body count. Not according to plan, he frees a young prostitute in distress but extraordinary situations arise. The good thing is she's on his side and extremely bent on revenge.

Director of *Ong Bak*, Prachya Pinkaew is one of Asia's most respected martial arts film directors. Making his first English directorial debut on *Elephant White* with Australian DOP Wade Muller, the film is ambitiously shot within two months entirely in Bangkok.

After a phone call from a producer Muller collaborated with last year, a meeting with Pinkaew quickly progresses onto principle photography six weeks later. The 48-day shoot sees very little daylight; in-fact over 90% of the film features night scenes which the new MX–Sensored RED cameras (with an ISO setting of 800) are able to brilliantly capture the Bangkok skyline. "Compared to the limitations of the old sensor, the new MX sensor is completely noise free," says Muller. "We often shot parts of the action sequences at 96FPS, so increasing the ISO from a base of 500 to 800 (and by slightly opening up the lens) is sufficient instead of adding more light."

During pre-production on this film, Muller maximises the time for location scouting and shooting test shots on Djimon's stand-in. The actress Guzjung, who plays Mae, has very light skin and Djimon is very dark. Therefore vigorous tests prove the new MX sensor lives up to its reputation. It is remarkable for its low-light sensitivity but also for the way it handles extreme contrast between the two actors side-by-side; the capabilities of the new MX sensor surprises Muller beyond expectations. Before the tests, he was anticipating the need to back off light on Guzjung every time they are in the frame together.

On set the team uses Ultra Primes and Optimo Zooms. Muller explains, "The camera is occasionally used in the 3K mode with 180mm or 24-290mm to get extra focal length for scenes like the sniper's scope point-of-view". A PL converted Tokina 11-16mm T2.8 zoom also complements the Ultra Primes perfectly. The only filtration in-use are ND's and ND Grads. A range between T2 – T2.8 allows the focus pullers to work efficiently. Muller claims, "I like to shoot at T2.8 because it still gives enough depth most of the time and it's fair for the focus pullers to work within." There are four cameras on set - two of them MX REDs and the other two are regular REDs. During action sequences, all four cameras are definitely in operation but occasionally they also provide extra coverage in dialogue scenes with multiple actors. Kinoflos are frequently in-use for interior close ups and eye lights. Some remain in the shots after the art department disguises them with plastic wrapping to carry off a worn-out exterior look. Maximising their output and to get the most out of the balloon lights (2 x 2.5K bulbs), 18Ks are bounced into them.

To conjure up an edgy look for the film, Pinkaew jokingly comments about not requiring tripods on location. All in all a large portion (up to 75%) of the film is indeed shot handheld. Whenever it is feasible, lighting is constructed for 360

degrees where flags and nets are always adjusted up until the camera rolls. To allow the steadicam more flexibility in terms of movement and an advantage for more interesting angles, practical lights are almost always in shot; these sources are connected to dimmer boards. The colour mix Muller devised with Thai gaffer Maitree Wannachotec plays out most strongly in the scenes of the gangster's hangouts using contrasting colours of greens, reds and hues of blues and reds; the general colour palette however was neutral colours.

"Lighting in 360 degrees for almost the entire film gives much more freedom should the actors suddenly face a different direction or take a few more steps; some minor tweaks are all it takes. So I usually try to do enough pre-rigging to make this possible." Muller continues, "On the bell tower set where Church launches into a sniper position, the effect is created with 18Ks on cherry-pickers at a distance shining through the window, as well as several smaller fixtures on the ceiling. Achieving this gave the actors more room to roam freely from side-to-side without any drop off."

In one of the scenes, Church hastily flees from Ratchadon's whorehouse after a killing spree. Despite Church being a relentless assassin, Pinkaew crafts the atmosphere of that sequence to appear sorrowful so as to make audiences feel sympathetic for the girls standing in the stinking alley soaked to the skin. This effect is achieved with the ten girls underneath multiple rain bars naturally spraying in all directions. The steadicam shot begins at 24FPS moving behind Church, and ramps to 60FPS up towards the vulnerable girls. The shot then slowly creeps forward and eventually focuses back round to Church walking forward as the camera tracks back.

The extended forest environment is another location in particular where the MX camera's low-light sensitivity comes in handy. To spread an even layer of hazy smoke on-site, a machine normally used for insecticides becomes an ingenious solution. A network of 25-meter long tubes is injected with tiny holes at equal intervals. These adjoining tubes are laid in the background to create a gradual rise of very realistic mist.

Other realistic aspects of the film include numerous speciality weaponry in-use on set like sniper rifles- the Accuracy International and Barrett. The entire crew has to hide behind Lexan sheets each time these powerful shotguns, like the Cobray Street Sweeper goes live in the action sequences. Kudos to Kevin Chisnall and his team for keeping the entire crew safe from the applications of heavy artillery and firepower throughout the filming process.

Another great feat to acknowledge is the filming of the fight choreography where Pinkaew and his team really excel. To get in the midst of all the action, the camera crew strips down the cameras to a bare minimum and only uses the lightweight 11-16mm Tokina. As a result the after-effects are extremely bold, with much of the blows narrowly missing the edges of the camera lenses. Overall, the fight sequences are sensationally edited with wider profile shots.

There were some very daring stunts in the film , one had

Hounsou taking aim. INSET: Hounsou blocking for one of the few day scenes

Crane shot at Gangsters Club

Muller preparing for a crane shot

Hounsou's stunt double Buddy Sosthand driving through the side wall of the gangsters mansion. The production built an entire wing extension of the mansion to accommodate this elaborate stunt. The stuntman inside the room could not see the car coming; they had to react just as the car crashed though the wall. This takes incredible reflexes to pull off. Another stunt had Sosthand driving at high speed on the wrong side of the road with many stunt drivers coming towards him head-on while also being shot at with a M-79 grenade launcher.

Millennium Films went through Bangkok-based De Warrenne Pictures for their production services. They did an incredible job keeping this production running as smoothly as it did.

"Shooting in Thailand is similar to shooting in Australia. All the equipment you have at home is here, the local crew is world class , they really take pride in their work," says Muller.

The post-production on this film is very international. The edit is taking place in Bangkok, all the CG work in Bulgaria and the final grade will be in Los Angeles.

Elephant White is the fifth feature-length film Muller has been involved with in Thailand. There is no doubt the film industry in Thailand is a force to be reckoned with; perhaps it is this undefeated professionalism that keeps Muller coming back for more.

Elephant White is currently in post-production with a release date for the end of 2010.

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FRANSWA SHARL BY JUDD OVERTON

BW Judd

Shot by Cinematographer Judd Overton, *Franswa Sharl* won the Berlinale (Berlin Film Festival) Crystal Bear for Best Short Film in the Generation K Plus program, the IF Media Award for Most Popular Film at Flickerfest and most recently, Best Australian Short at the Melbourne International Film Festival (MIFF).

The path towards an award-winning short film is never easy to chart; however, when Screen Australia backed this project, a combination of a great story and the support of a fantastic crew and facilities really helped give *Franswa Sharl* a shot at success.

Based on the true story of co-writer Greg Logan's own youthful experiences in 1980, *Franswa Sharl* focuses on Greg, a 12-year-old boy who has inherited his father's strong competitive streak. After his sporting prowess and creative skills fail to win his father over, Greg succeeds in capturing his attention during a family holiday in Fiji. To his father's dismay, he reinvents himself as a French girl and enters the resort's Beauty Pageant.

I first met director Hannah Hilliard at the Australian Film Television and Radio School in 2005. After graduating, Hannah directed a documentary for advertising creative Greg Logan and discovered his amazing true story.

Opening shot, Sunset on a Fijian beach as the cocktails are passed around. Sounds like the dream job; unfortunately, the budget didn't quite stretch to cover a shoot in Fiji so Hannah and I combed the East coast of Australia in search of a suitable 1970s resort, discovering all the variations for what passes as a 'Lagoon Style Pool'. After extensive searching we came across the wonderful Pete at One Mile Beach Caravan Park. Approximately 3 hours north of Sydney, the park had a swimming pool area untouched since the 80s and the owners bent over backwards to support and house cast and crew for our 5 day shoot.

Right from the beginning Hannah and I agreed that Super 16 was our ideal format for shooting *Franswa Sharl*. The look of film really helps set the scene, in this case transporting the audience back in time. Not only was Super 16mm an aesthetic choice, but it also helped by giving me the exposure latitude to manoeuvre in post. Producer Linda Micsko supported us all the way.

Hannah really wanted to stay away from what we identified as the 'Australian look', As we researched we noticed a real

trend towards low saturated warm wash and lifted mid tones, shallow depth of field and floaty hand-held camera.

The film is set in 1980 in Fiji and is a family comedy, so we wanted to capture the essence of that period without making the film look dated. Essentially we aimed to shoot the film the way a child may remember a family holiday. Film, Super 16mm in particular, has the inherent ability to enhance the nostalgic look of the era, which was so important to the capturing the world of *Franswa Sharl*.

Judd Callan Tent

With the cinematography we aimed to create a fairytale feeling through light and colour, yet remain true to the real life events in the film. This meant taking slight theatrical cues particularly in the production and costume design but maintaining a sense of realism in the grade and quite traditional coverage and camera movement. We minimised overly stylistic camera work to create a sense of reality and immediacy. The added advantage of this naturalistic lighting style was being able to shoot in a fast and flexible way, in order to capture performances from the mostly child cast.

The nature of working with young people, some untrained, dictated the need to stay on our toes and be ready to roll. Limited focus marks, a large ensemble cast, 2 shooting formats and 4 different cameras; I really have to thank my focus puller Brie Walsh who once again took it all in her stride.

We had a cast of 5 actors all under the age of 14 and all in every scene. Additionally we had an adult actor who had recently given birth and was feeding every 2 hours. Add this to an 8 hour shoot day with 10 minute breaks every hour and our AD department was really kept busy.

Capturing the beautiful tropical sunshine of Fiji, but shooting in autumnal northern New South Wales, we were always at risk of a downpour. The one prayer was that we would have clear blue sky for our huge finale, the Beauty Pageant scene. Gaffer Paul Booth and his team worked extremely hard in trying conditions to maintain a consistent look. We used 2x 4K HMI's for fill from the sun and an array of 12'x12' fabrics for bounce.

With a tight schedule and no flexibility for reshoots, we were constantly watching the weather. However, when the worst happened and it started to rain on our parade, we quickly hid underneath the 12' sails and created contrast with HMI backlights, trying to avoid the telltale drips. Due to the overcast conditions and constant down pours, many of our close ups and coverage on the adult actors were shot Night for Day by shooting into sails and polystyrene sheets lit with HMI plus Full CTB Gel. The big challenge was later in the week when the sun came out and we had to match wide shots of 50 extras in cloud and rain with inserts lit by the harsh Australian sun.

One of my favourite scenes was a night time tent scene which was all lit from practical torches operated by the kids. In this scene a game of truth or dare in the back yard has a warm innocence. I half corrected the tungsten torches and shot on Kodak Vision2 250D 7205. Lighting assistant Bec Marchant added to the roaming lamps with a diffused, ½ CTB Arri 650 to make sure we didn't miss any of the action as the romantic leads have a special moment.

In pre-production I managed to get my hands on one test roll of the latest Kodak Vision3 250D 7207 stock which is

Dance

Fiji in One Mile Beach NSW

amazing in over-exposure and mixed colour temperatures. Unfortunately there was no 7207 stock in Australia at the time, so we stuck with the Vision2 250D and used a majority of the Kodak Vision 50D 7201. I love the 7201, which is a great work horse and responds amazingly to the bright Australian sunshine. I did manage to keep enough of the 7207 to shoot some dusk and night establishing shots. The extra speed really helped out. The processing was done at Deluxe Sydney and EFILM for daily rushes transfer at ProRes422HQ.

In addition to the 16mm we shot Super 8 for a number of montage scenes where we break away into the private world of lead character Greg Logan, played by rising star Callan McAliffe.

The idea of shooting with Super 8 was to evoke the world of imagination and to also punctuate certain dramatic points. These more intimate moments further enhanced the nostalgic elements of the family holiday as captured by Dad's home movie camera.

Colourist Trish Cahill, who did a fantastic job bringing together the footage to recreate the tropical 70s/80s period, said that the rushes were some of the cleanest 16mm footage she had seen.

We always aimed for a DI from the S16mm; the negative was scanned at 4K and then graded in Lustre so when we were accepted to compete at Berlin we swung into action with the support of EFILM, KODAK and Screen Australia to produce a 35mm film print.

The best result was being at the screening in Berlin and hearing the enthusiasm and laughter at the right beats.

At first it felt like the audience wasn't understanding the Australian colloquialisms but as the film progressed I realized that the mostly teenage audience was just concentrating intensely, taking it all in. As the stakes start to rise and Franswa makes his debut, the crowd went wild.

Wherever the film screens we seem to really capture the audience's imagination; they really get into the mood, laughing and clapping along. In the past, many of the films I've shot have been serious and heavy subjects. These are the films that have done well in festivals and awards. It was great to try my hand at a film that is pure escapism and really makes people happy.

TECH SPECS

Arriflex SR3 (Panavised)
Bolex Paillard H16
Canon 1014 S8
KODAK VISION2 50D 7201
KODAK VISION2 250D 7205
KODAK VISION3 250D 7207
KODAK EKTACHROME 64T Color Reversal Film 7280
Panavision Primo Lens'
Bealieu R16

◀ Spot the mistake

Look over Kylie Gillies shoulder, there are two ambulances, where a child is knocked over by a car. And no one noticed on the show. Carried on with the clap trap. Is this why they moved to a street set?

▼

▲ Marion Leake and John Leake's OAM daughters, Marion, Micaele and Meredith, Government House Sydney

PANAVISION SUPPLIES AND INSTALLS FIRST EVER 3D RIGS USED IN AUSTRALIAN SPORTING EVENT

For Australia versus New Zealand FIFA World Cup soccer build up match

Sydney, 21 June 2010 – According to Panavision Asia Pacific Managing Director Martin Cayzer, the 3D rigs that Panavision supplied and installed for the recent Australia versus New Zealand FIFA World Cup soccer build up match in Melbourne represent not only a first for the company but also for Australia and the state of things to come for the future.

"The 3D rig project for Australia versus New Zealand came about shortly after we announced our partnership with Element Technica," said Cayzer. "We are now the exclusive Australian distributor for Technica 3D, a family of stereographic 3D rigs designed by Element Technica to precisely align and control positioning of a pair of cameras necessary for stereographic 3D imaging."

With the new partnership successfully in place, Panavision Asia Pacific Business Development Manager Andrew Timlin began discussions with Global Television's Andy Armstrong and Andrew Quinn regarding what Panavision could supply in terms of equipment and expertise for a then 'upcoming' sporting event.

Timlin said, "The initial discussions were in line with Global's usual client confidentiality requirements added by the fact it was the first broadcast of its kind so we had to quote without knowing specifically what the project was. We then did a full camera to 3D rig compatibility and systems check with Global TV and then demonstrated the Technica 3D rig set-up for senior executives and technical personnel from Global TV and Fox Sports with excellent results."

The demo set-up consisted of a full Technica 3D rig, two Global TV-owned Sony HDC1500 multi-format HD portable cameras and a JVC 46-inch 3D LCD monitor.

Global TV's Andy Armstrong said, "Quite honestly the demo was in line with our expectations as we had already been in discussions with Element Technica. The images and entire set-up didn't disappoint so we then committed to move ahead with the Panavision Technica 3D solution from that moment."

With only three weeks until the match, Panavision's team swung into action. Martin Cayzer explained, "This project was a first for 3D television in Australia and also moved Panavision firmly into the OB arena. We did more tests with Global, Fox Sports and Foxtel to make sure everyone was comfortable with the technology and images. There was much to do as we were to supply the 3D equipment and personnel to operate it. Our philosophy, which differs from some others, is to recruit and train local technicians and crew to keep the

costs as low as possible for the client - so we set about doing that immediately."

In total Global TV required five full Technica 3D rigs for the shoot and a significant number of trained crew.

Cayzer continued, "We had two rigs as local inventory and sourced the other three from Panavision's international network. This was a challenge in itself due to the unprecedented demand for 3D rigs worldwide. With the equipment secured we put together a team consisting of key Panavision Asia Pacific staff and some experienced locally-based technicians."

In addition to MD Martin Cayzer, Panavision's crew included Andrew Timlin as Project Co-ordinator, John Virtue as Head of Sourcing and Operations, Peter Lorz as Head Electronic Technician and Grant Hansford in charge of Optics and Rigs.

"We also brought in and trained four Interocular Convergence (IC) Pullers, a Stereographer and Lead Technician," said Cayzer. "It's a fact that with Stereoscopic 3D broadcasts there can be twice as many crew required to fully staff the shoot which can get expensive if you're flying them in from overseas, so we prefer to use in-house and local expertise and train people wherever possible."

Panavision supplied and installed five Quasar Broadcast rigs for Global TV – four mirror rigs and one side-by-side rig. The Technica 3D rigs have incorporated a number of groundbreaking features to the 3D rig marketplace. One of the major developments is the ambidexterity of the rig to the two principal stereoscopic shooting styles, side-by-side and beamsplitter (in both cinematic and broadcast configurations).

To achieve a stereoscopic image, a pair of cameras must be placed side-by-side, with what's known as the interocular distance between the two lenses. To maintain a realistic 3D effect, that interocular distance will vary according to a number of parameters including distance from the subject and lens focal length. When interocular distance must be reduced to such a point that the physical dimensions of the cameras do not permit a close enough interocular distance between the lenses, one camera is rotated 90 degrees and the image it shoots first passes through a prism, known as a beamsplitter, to direct it to the lens' new location. Since the cameras in the beamsplitter mode are only optically side-by-side, a minuscule interocular distance is possible.

Cayzer said, "Many existing 3D rigs are capable of only side-by-side or beamsplitter shooting, but not both. A Technica 3D rig can be reconfigured from side-by-side to beamsplitter, or vice-versa, in ten minutes or less."

Global TV's Andrew Quinn added, "Panavision set up all five rigs at our studios and conducted a very comprehensive programme of testing and configuration before setting off with the kit in our OB trucks to Melbourne. It was a major exercise and a very worthwhile one."

The testing also included a test transmission with a full 3D rig at Fox Sports' studios in Pyrmont, broadcast successfully to Fox Sports and Foxtel.

With all the testing successfully completed the equipment was driven to the Melbourne Cricket Ground (MCG) where the match was to be played. Panavision, alongside the crew from Global TV, set up and calibrated the cameras and lens controls for all five rigs. Fibre optic feeds from the cameras to the switchers were routed via a Sony MPE200 3D image processor and the 3D monitoring taken care of by a JVC 46-inch GD-463D10E 3D LCD screen installed in Global's award-winning HD1 truck.

Andrew Timlin said, "We started rigging and plotting camera positions and cable runs about 7am on the day before the game. At 4pm we did a successful test record with the Australian team training in the background leaving the next day for refinements and last minute calibration."

With the final set-up complete, the rigs were ready and the game began becoming the first ever live Australian sporting event to be broadcast in 3D.

Andrew Quinn commented, "It was a huge success and went even better than we anticipated. Hats off to Panavision, Fox Sports and all concerned. This is very much the future of 3D broadcasting."

Fox Sports Head of Technical Todd Proctor said, "The broadcast went out on FOX SPORTS 3HD (Channel 205) and was seamless. The reaction to the broadcast has been excellent to the point that we have recorded and broadcast a couple of other 3D projects with Panavision since. Thanks to Panavision and Global TV, 3D sports broadcasting in Australia is now not only possible but cost effective too."

Martin Cayzer concluded, "Putting together the first full 3D rigs for an Australian sporting broadcast was quite a challenge. Building up our local capability to make it commercially viable for both Global TV and Fox Sports was equally challenging and rewarding as we now see that it can be done. This is very much the future of sports broadcasting in Australia and we are delighted to be a part of it."

Panavision 3D rigs at the recent Australia versus New Zealand FIFA World Cup Soccer build-up match in Melbourne at the MCG.

CINEGEAR 2010 REPORT
– LOS ANGELES , 4-6 JUNE BY DAVID WAKELEY ACS.

Cinegear is, as the name suggests, all about camera, lighting and grip gear, plus seminars and panel discussions, both free to all visitors and at a cost for specialist subjects; staged this year in the New York Village lot of Paramount Studios, so without anything else there is the magic of the studios, cinemas and lots of Hollywood nostalgia at every turn. We usually bump into several Aussies each year. This year it was Matt Stewart ACS, Louis and James Puli, Peter Marsden and Jasmine Lord.

The ASC renovated clubhouse

I had the pleasure of being invited by past president Daryn Okada ASC to the ASC Clubhouse party for a few close friends (around 300!) on the Saturday evening. A balmy Hollywood night, with great food, the odd drink and like-minded people from all corners of the earth; including BSC/ Imago's Nigel Walters BSC. Daryn Okada was serving drinks at the new bar, in front of a picture of the late William Fraker ASC, who passed away only a week before Cinegear. Daryn made a point of telling everyone around the bar area about the great time and wonderful hospitality he and his wife enjoyed in Sydney at ACS50.

THE GEAR AT CINEGEAR:

Lighting varied from the very big to a myriad versions of LED lighting, from Rosco's handy small Lite Pads through to much larger fixtures including the PRD LED 'Spacelight' giving 50 foot candles @ 4 metres and variable colour temperature. Very expensive, but if you had a long running studio shoot, they would pay for themselves in no time with their 6,000 hour bulb life, saving much of the production time lost hauling down regular Space Lights to change lamp stock.

Grip Gear was a bit light on for new kit this year, but the dedicated may have found some exciting new track designs and there were several new (very expensive) Slider designs. Sliders are usually attached to a dolly or tripod allowing small precision moves of up to 1 metre. I noticed the variation in 'soft' stopping arrangements, from deliberate 'wedge' effects on the track to slow you down gently through to a sophisticated use of opposing magnets. The most intriguing thing for me was a seven axis motion control arm, with a working prototype of the new RED Epic camera fitted (the only working Epic model at the show!). The arm, built by Cmocos can be fitted to a tripod, or a dolly. All the axes are operated by infinitely repeatable preset moves. The system was developed from the robotic water tentacle used in *The Abyss* where the camera could spin and the lens remained dead centre, while the arm could be moving around it.

Camera displays showed dozens of aftermarket gadgets designed to make DSLR cameras cine operator friendly. A Canon D5 360 degree camera array gained lots of interest.

Apart from the RED Epic on the Cmocos arm, RED did not have a display this year. I was, however, invited to the new RED Studio complex (originally Metro, Desilu then Renmar) by 2IC Ted Shilowitz, meeting the venerable Jim Jannard and taking in more nostalgia while marvelling at the capabilities of the new Epic prototypes and seeing my RED MX material on their 4k 40' screen.

ARRI are creating lots of excitement with their Alexa, ARRI Australia's Stefan Sedlmeier having sold several already (more on Alexa in coming issues).

As evidenced at NAB, there are several new sets of PL and DSLR mounted prime and zoom lenses on the market with an extremely wide price range from 'affordable' through to 'mortgage the house!' I liked the look of Band Pro's Focus Optics Ruby 14-24mm zoom, Schneider and Leica's prime sets. Geoff Boyle BSC's CML (Cinematography Mailing List) held a Hollywood party where I met Chris Mayhew, working with Vision 3/Thale Angenieux, who is developing a 2D Stereo acquisition approach, which uses an oscillating iris single lens setup to both vertically (which 3D stereo doesn't do) and horizontally 'look around' the subject.

Further on the 3D stereo subject, there were a plethora of

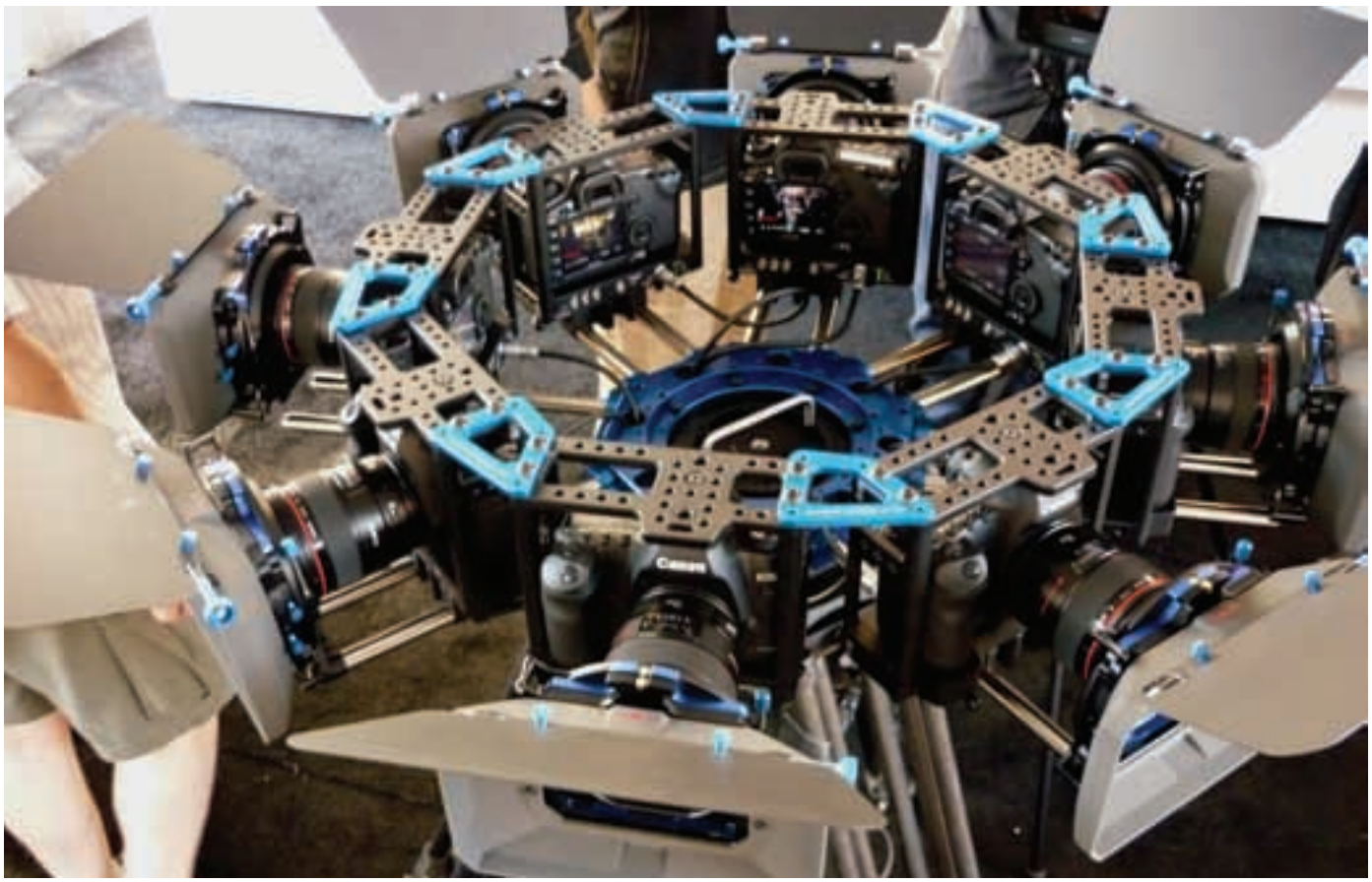
Daryn Okada checks out the ARRI Alexa

RED Epic on Cmocos arm

different approaches to 3D acquisition with both horizontal and vertical camera arrangements and cameras varying from film, RED, S12K and, of course, DSLR cameras.

A full program of sumposiums started with a 3D Production panel, followed by 3D Post and then Exhibition. Free demonstrations by ARRI (Alexa), Canon, Fuji, Kodak Abel Cinetech, Sim Video and Osram were held in one of two Paramount theatres operating non-stop. The ASC, Society of Camera Operators, Digital Cinema Society and American Cinema Editors authored panel discussions. My favourite was industry journalist Bob Fisher with Wally Pfister ASC discussing his newly released Christopher Nolan movie, *Inception*. Wally insisted on shooting on film (Kodak), lots of it in 35mm and 65mm, strongly holding the belief that NOTHING can match film, especially large format film. They shot on virtually everything depending on the scene. Helicopter shots on Vistavision through to a few high-speed digital effects on Phantom. Wally holds the belief that Stereo movie-making takes the audiences away from the story with hindering mechanics - glasses etc. 'really just a gimmick for spectacle productions'.

Finally, offsite from Cinegear, on the Sunday, 50 very fortunate attendees received the best value $75 they ever spent, with Bill Bennett ASC (and honourary ACS member), demonstrating his famous TVC car lighting and Gabriel Beristain AMC BSC ASC demonstrating his episodic craft showing the difficulties of lighting interiors to match exteriors while filming in Hawaii. More on Bill's lighting next issue.



Canon's 5D 360 degree array

SHOOTING MOVING STILLS BY PETE HALL

On 8 July the SA branch presented "Moving Stills". This DSLR night, mainly featuring the Canon 1D, 5D & 7D, was held to teach about shooting moving images on stills cameras. It was one of our best-attended events ever with fifty-six turning up! They were all hungry for info, pizza and a drink.

We had lots of examples of footage shot in all sorts of conditions. We discussed the pros and cons and had quite a few cameras in their different configurations to play with, including a fully pimped up 7D rig with PL mount, Zacuto follow focus, etc. The presenters included Pete Hall from Picture Hire, Rags Phillpot from Kojo, DOP Nick Mathews and post expert David Ngo from the Cutting Room. Many thanks to all the presenters and to our hosts, State Gold sponsor, AV Central.

The night generated so much interest we gained 14 new members. On the night some info sheets were handed out and we thought the rest of the ACS members could find them interesting. So they are published in this issue of AC magazine. Many thanks to our member, Pete Hall, for compiling these sheets.

CANON EOS 1D MKIV

Effective Pixels	16.10 million (4896 x 3264)
Sensor Size	CMOS (APS-H) 27.9x18.6mm (crop factor 1.3)
Processor	* Dual DIGIC 4 processors
Chroma Subsampling	4:2:0
HD Recording	1920x1080 @ 44Mbps
Recording Size	1920x1080 (Full HD) 30p/25p/24p, 1280x720 (HD) 60p/50p
Recording Times	16GB Card = 49mins of HQ.
Continuous Record Times	The recording will stop automatically once the file size reaches 4GB, or if the clip reaches 29 min. 59 sec in duration.
Native ISO	160, 320, 640, 1250, 2500, 5000, 10,000
Audio Recording	AGC (automatic gain control)

CANON EOS 5D MKII

Effective Pixels	21.10 million (5616 x 3744)
Sensor Size	CMOS (Full-Frame) 36x24mm (crop factor 1.0)
Processor	DIGIC 4 (single)
Chroma Subsampling	4:2:0
HD Recording	1920x1080 @ 44Mbps
Recording Size	1920x1080 (Full HD) 30p/25p/24p, 640x480 30p/25p
Recording Times	16GB Card = 49mins of HQ
Continuous Record Times	The recording will stop automatically once the file size reaches 4GB, or if the clip reaches 29 min. 59 sec in duration.
Native ISO	160, 320, 640, 1250, 2500, 5000
Audio Recording	Manual (firmware upgrade)

CANON EOS 7D

Effective Pixels	18 million (5184 x 3456)
Sensor Size	CMOS (APS-C) 22.3x14.9mm (crop factor 1.6)
Processor	* Dual DIGIC 4 processors
Chroma Subsampling	4:2:0
HD Recording	1920x1080 @ 44Mbps
Recording Size	1920x1080 (Full HD): 30p/25p/24p, 1280x720 (HD) 60p/50p
Recording Times	16GB Card = 49mins of HQ.
Continuous Record Times	The recording will stop automatically once the file size reaches 4GB, or if the clip reaches 29 min. 59 sec in duration.
Native ISO	160, 320, 640, 1250, 2500, 5000
Audio Recording	AGC (automatic gain control)

* Dual processors allow for rapid fire continuous shooting > 1DMKIV = 10fps & 7D = 8fps. The 5DMKII (single processor) is only 3.9fps.

Positives »

- Shallow Depth of Field
- Price Point
- Use of many affordable lenses, both old & new
- Inexpensive recording media in CF &/or SD Cards
- The listed DSLR cameras are both a Stills '&' Video cameras
- The ability to record high resolution stills & build time-lapse sequences in FCP etc.
- Small in size in comparison to other video cameras
- Lovely natural tones unlike most 'video' cameras
- Usability > very easy to use

Negatives »

- **Line-skipping** > DSLR cameras squeeze a monstrous still image down to a 1920x1080 HD video image. In the 5DMKII's case the 21 megapixel sensor is downsampled to HD resolution by only using every third line leading to concern about Moiré patterns in recorded video.
- **Rolling Shutter** > Most of us are aware of the 'Rolling Shutter' issues found in CMOS chip cameras. The sensor in these three DSLR Cameras have a very slow refresh rate, resulting in 'skew' & 'wobble' effect. Of the three cameras the 1DMKIV holds up best. Rolling Shutter is a method of image acquisition in which each frame is recorded not from a snapshot of a single point in time, but by scanning across the frame either vertically or horizontally. Not all parts of the image are recorded at exactly the same time. This produces distortions of fast moving objects or when the sensor captures rapid flashes of light. This method is implemented by rolling the shutter across the exposable image area instead of exposing the image area all at once.

- **H.264 Compression** > QuickTime MOV **H.264**/MPEG 4 is a compression codec that is mostly used for web. However, as it has the ability to be adjusted to different frame rates, data rates & resolutions, it is the basis for a lot of other outlets - BluRay, iPhone, iTunes, etc. At the moment it is certainly the codec of choice for data to quality ratio. It is possible that H.264, at a higher data rate, would be a reasonable acquisition format, but at the rate it is used on the stills cameras it is heavily compressed & leaves little room to move in post (very little latitude & colour information). DSLR's need to be shot accurately on the day because you can't push anything around more than about 10% without it falling apart.
- **Confusion between models** > Features vary from model to model, plus all three listed DSLRS have different crop factors, strengths & weaknesses.
- **Lack of traditional video features** > zebra patterns, markers, viewfinder, servo zoom lenses, manual audio (5DMKII exception), multiple video outputs & lack of long recordings. However, 'Magic Lantern' offers free firmware that incorporate some of these features - http://magiclantern.wikia.com
- **Over Heating** > When recording for long periods, especially in warmer conditions, all three of these DSLRs will experience CMOS overheating & an increase of video noise may occur. The 1DMKIV, being a better build, is less prone to overheat as it's considered to be a pro camera.
- **Lenses** > Although the quality is there Canon's top of the line lenses they are not designed for Filmmakers who rack manual focus.

Other Notes »

Colour Space (8-bit) - Adobe RGB vs sRGB > Adobe RGB is a larger color space than sRGB. sRGB is what most PC's & monitors use & it will display reasonably well on emails & web pages without the need for any color management software. Adobe RGB is only relevant to stills work, not shooting HD video. Be aware that the sRGB/Adobe RGB selection on your DSLR applies to in-camera JPEG/TIFF images only. If you are shooting in raw mode, your raw images will not be altered or stored in any color space, so the color space selection will not be a limiting factor.

Native ISO > Non 'native' ISO or exposure compensated ISOs will introduce more noise than native ISOs. On 5DMKII & 7D stick with ISO 160, 320, 640, 1250, 2500, 5000 etc. Let's say you select ISO 200 you're actually using ISO 160 then using exposure compensation to boost the sensitivity of the sensor. The end result is a noisier image, you're better off using ISO 320.

Picture Styles > By default the cameras will give you a high contrast image, with a fairly hefty 'S'-curve applied. This gives the colourist very little to work with. Changing the Picture Style settings to a lower contrast range will increase the usable dynamic range and give the colourist slightly more freedom in the grade. Each 'Picture Style' can be thought of as being similar to different types of 'film', each one is made up of a tone curve, color map & default sharpness. The Canon DSLR cameras comes with six programmed Picture Styles – (1) Standard, (2) Portrait, (3) Landscape, (4) Neutral, (5) Faithful & (6) Monochrome. 'Picture Styles' can be customized easily either manually or via Canon's Picture Style editor. There are many downloads available on the net, but be wary of the 'Flat' & 'Superflat' Picture Profiles, shoot some test images first.

Popular HDSLR websites »

See Zacuto's awesome three part series where HDSLRS are compared to motion picture film > www.zacuto.com/shootout

www.planet5d.com	www.cinema5d.com	http://mydslrshow.com	www.cinematography.com	http://forums.dpreview.com
www.freshdv.com	www.eoshd.com	http://www.canonrumors.com	www.cinematography.net	www.hdslrshooter.com

SENSOR SIZES

Camera	Sensor Type	Size	Crop Factor
Canon EOS 5DMKII	35mm Full-Frame CMOS Sensor	36 x 24mm *(diagonal 43mm)*	1.0
Canon EOS 1DMKIV	APS-H size CMOS Sensor	27.9 x 18.6mm *(diagonal 34.5mm)*	1.3
Red One	Super 35mm size CMOS sensor	24.4 x 13.7mm *(diagonal 28mm)*	1.55
*Sony F35	Super 35mm size CCD Sensor (x3)	23.62 x 13.28mm *(diagonal 27.1mm)*	1.58
Canon EOS 7D	APS-C size CMOS Sensor	22.3 x 14.9mm *(diagonal 26.7 mm)*	1.6
Panasonic AG-AF100	Micro 4/3" MOS Sensor	17.3 x 13mm *(diagonal 21.6mm)*	2.0
Sony PDW-F800 XDCAM	2/3" CCD Sensor (x3)	8.8 x 6.6mm *(diagonal 11mm)*	3.9
Sony PMW-EX1/3 XDCAM	1/2" CMOS Sensor	6.4 x 4.8mm *(diagonal 8mm)*	5.41

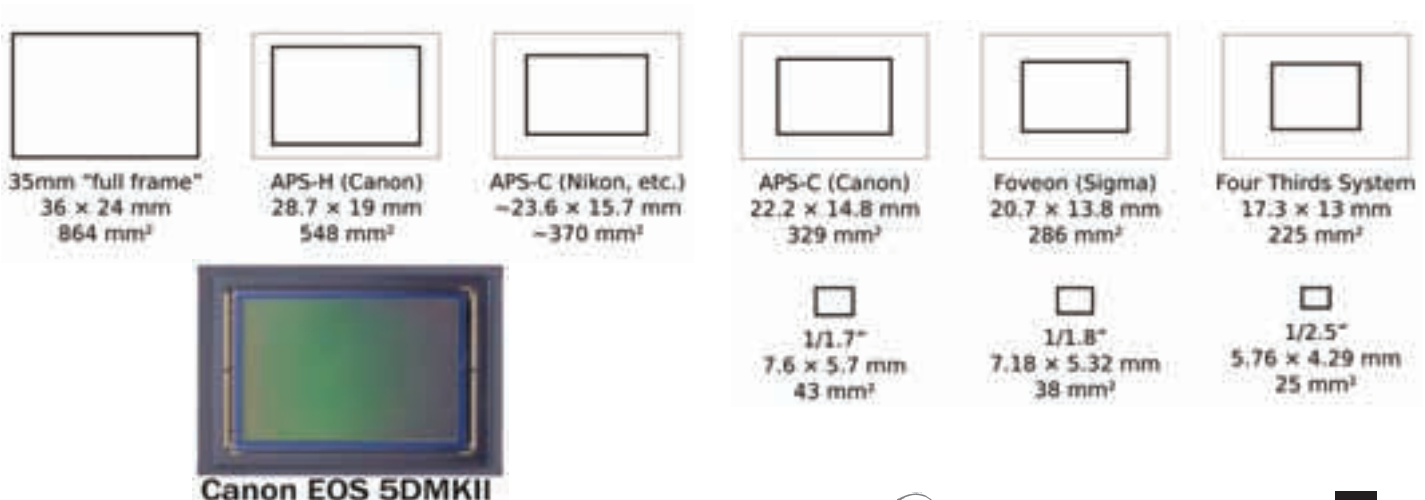
*same as Genesis

Calculations are in some cases approximates

Example » To calculate the crop factor of a 2/3" sensor; 43mm ÷ 11mm = 3.9

Notes:

- 35mm Full-Frame is referring to Full-Frame stills not Full-Frame motion.
- Many things contribute to image quality; the size of the sensor is only part of it.
- Large sensor benefits are:
  - > Dynamic Range – Large sensors have the ability to reproduce detail in both very low & very high light levels.
  - > DoF – Large sensors have a shallower depth of field than that of a smaller sensor.
  - > Sensitivity – Large sensors capture more light therefore are more sensitive than smaller sensors.



DAVID LEWIS ACS

TELLS OF HIS MOST RECENT TVC SHOOT FOR HYUNDAI IN INDIA.

BY RON WINDON ACS

As it normally goes you get the phone call and they want you there yesterday. Fortunately I had a current visa and could make it to India for their shoot dates in 5 days time. The problem was getting a flight to Mumbai at such short notice. With this problem solved, the director Juan Jaramillo and I departed Sydney on Saturday 20 March, and arrived in Mumbai at 2.00am Sunday for the planned Tuesday shoot.

Juan had been working on the script and storyboard for 3 months. The Hyundai TVC was now scheduled to go to air a month earlier than originally planned, and was to be aired during the IPL 20-20 cricket competition in three weeks time.

Because of the very short pre-production time, we both expected the worst, i.e. confusion and mayhem as we had both done lots of work in India before. However, we were to be pleasantly surprised.

After a good sleep we did a survey of the studio and locations, and a meet and greet at around 4.00pm that Sunday. The huge set was under construction, the cars had arrived (one a full cutaway version for interior shooting), the crew were briefed and ready to go, and all the necessary camera and lighting gear had been ordered. We were to shoot on 35mm Kodak Vision3 500T and use an Arri 435 with Ultra Prime lenses.

The TVC was about a young Indian executive type male driving his new car at night along a street to his apartment, driving through a large multi level car park where he takes his private car lift to his luxurious apartment on the top floor, drives through it and arrives besides the pool on his balcony overlooking a busy city skyline. (All to be shot in 3 x10 hour days, no problem!!!) This would have been a challenge anywhere in the world not just India.

Surprisingly, everything went smoothly on our first pre-production day and we were back at our hotel by 9pm. Next day the pre-light was well underway, the sets and the green screen backgrounds nearly complete, and people going everywhere. The production staff were relaxed and everything appeared to be okay.

I had not worked with any of my camera crew before but from experience I knew that, if they came recommended, they would be good. The focus pullers in India are very skilled, and although their English at times is limited, there is a brotherhood amongst camera crew the world over that enables a few hand signals, a few common words like lens and camera, and the rest just seems to fall into place. I found them very conscientious and fun to work with. Normally every valuable piece of equipment comes with a human minder (human insurance policy), so your camera department can get very large at times and it takes a lot of people to just change a lens, but that's the system.

The grips and "jimmy jib" operators were pretty switched on, having worked the" Bollywood" studio system for over 15

years. Again a little bit of English and a few hand signals and it all happened very quickly, most times with a lot of noise and lots of bodies moving everywhere, but it works.

Because of the large areas we had to light, (the streets, the car park, the apartment lift, the apartment and its balcony and the huge green screen backgrounds) and the fact the car was blue, a large lighting package was required. (Blue cars at night tend to photograph as black, a cameraman's nightmare)

My young Indian gaffer Rubb Bhugdawala whom I had not previously worked with was fantastic. He knew the storyboard backwards, spoke very good English and all I had to do was tell him the areas and style of light that I liked and it happened. I like to us large tungsten lights such as Dinos and 10 Ks as it is much easier to control and they don't reflect too badly in the car, as well as giving everyone a decent stop to work with. (Car shoots generally require a lot of long lens shooting).

The studio apartment set was approx 15m x 25m and the balcony 15 x 5 m. The major shot was to track with the car from the lift through the apartment and end up parked by the pool on the balcony. The side of the set was removed and we used a "jimmy jib" and 25 metres of track. The ceiling was photographed at times so the art department built a series of boxed ceiling lights. The gaffer lit the interior with blondes punched through diffusion from above and some smaller controllable heads.

Because of the large area of green screen to be filmed, this again presented challenges (a blue car against green). He used a light called a barrel light which is a circular formed silk material with 1 kw globes in the shape of a barrel about 1.5 metres long. These were on dimmers and rope pulleys and totally controllable, a fantastic light.

For the street scenes I used 3 dinos on high stands as ¾ backlight and several 12kw tungsten heads through 20x 20 scrims as white fill. To highlight some of the buildings I used several tungsten 5 Ks and two ½ dinos. The car park was the biggest challenge. The first shot was from a tracking vehicle one row back, shooting through the parked cars as our hero entered close to us, passed behind the other cars, and eventually met us at the end of the car park. There were other closer shots, tracking front and rear and several crane shots always trying to show how big the car park was. The art department had placed about 100 x 2 metres of translucent blue material on all the exterior openings of the car park. We were filming on the first floor, so to backlight the material, scaffold towers had to be erected on which the gaffer placed around 30 blondes. He then rigged 30 x 650 watt small black tungsten heads every 3 metres along the path of the car (about 60 metres) to the emergency firewater piping. At either end of the run I used two ½ dinos . Behind the tracking vehicle's path, another 20 blondes bounced into the white painted roof (art dept) and, just to finish, another 10x 1KW pups behind the far row of cars to get some more highlights into the blue car. Every shot had a full wet down. The car looked great, shooting stop T2.8-4

On one studio day, and the car park day we went several hours over but several additional large shots were added to the board. They were all used in the final edit so it was well worth the effort. The final post and grade was completed in Singapore and the air date was met (shoot day one to the on-air date, 17 days) a pretty good effort.

Overall the experience of working in India was very satisfying. To work with a very professional production company, a pleasant director, a skilled crew, and achieve a great result is what it's all about.

BY MANNY ASTON BA

Confederate Prisoners of War - 1863

MEN IN BLACK

DEALING WITH DEADLINES

The one thing I used to pride myself on as a writer was always meeting my deadline. Note the past tense, "used to pride myself on." Last issue the unthinkable happened – I completely missed my deadline. My fault entirely. Never happened before. Embarrassing.

Oh, there were plenty of excuses. Trust me there was a whole host of reasons. My daughter broke her arm. My son fell off his skateboard. I had the flu – you know, the "male flu" which meant I was sicker than anybody had ever been and my wife didn't understand this. I had assignments to mark, emails to respond to, people to see, places to go … you get the idea.

Now if you miss the deadline for putting out your garbage, no one really needs to know about it. Sure, it's inconvenient, but the whole neighbourhood doesn't find out. Miss the deadline for a magazine and it's really, really obvious - your article simply doesn't appear. I guess it could have been worse. Instead of The Big Picture, there could have been two blank pages with "Manny Aston missed his deadline" printed neatly in the middle.

Writing is generally a solitary activity, but it often has a very public audience. While working as a playwright, I was often confronted with a fully booked opening night, promotion in full swing, actors already in rehearsal … and an unfinished script! Talk about pressure. My nightmare scenario was not being able to finish on time and having to walk on stage to apologize to the opening night audience. "Good evening Ladies and Gentleman. My name is Manny Aston, the author of the play you thought you were going to see tonight …"

It struck me that the whole notion of deadlines might be an interesting theme for this Big Picture article. Let's face it, the film industry has a host of deadlines. Funding deadlines, script deadlines, casting, editing, production … the whole film has a deadline.

The name "deadline" has an interesting history. It began as a real line, drawn in the dirt, restricting prisoners in Civil War camps. They were warned, "If you cross this line, you're dead." To make the point a little more emphatically, the lines became railings or fences and guards were literally instructed to shoot any prisoner who 'crossed the line', so to speak. Soon guards and prisoners were calling it by its own bluntly descriptive name, the dead line.

The term happily crept into popular use to signify not only a

designated limit but any other situation with strict boundaries. But it was the newspaper business that made deadlines more than just a historical curiosity. To have the latest news and still get a newspaper printed and distributed on time required (and still requires) strict time limits for those who write it. Seeking the strongest possible language to deter procrastinating writers, editors formalised the word "deadline", with the implication that "Your story is dead" (or perhaps you are dead) if you go beyond this time to finish it.

One of the more entertaining angles to missing deadlines is looking at some of the excuses as to why these deadlines have been missed. As a teacher I'm quite an expert on these. Last semester, of 355 assignments that were due, 276 students submitted them on time. Of those who were late, there were 32 printer malfunctions, 27 computer malfunctions which included disks being accidentally wiped, viruses, corrupted files, erasure by sibling, fire, theft of the entire computer, and beer spilt on to the keyboard by the cleaners (I was genuinely curious as to whether the beer belonged to the student or the cleaners – and why it was next to the computer in the first place). Not one of the 27 students kept a back-up of their work.

There were 12 cases of illness or misadventure ranging from pregnancy (I didn't ask about this one), allergic reaction to a hand cream resulting in swelling (of the hands I presume) and an inability to type on a keyboard (unbelievably this was genuine). One student left her original medical certificate in the faculty photocopier with the whiteout still fresh on the date.

There were four funerals, one jury duty, two compulsory court appearances, and one student who was drafted into the Greek army. His interview with the consulate clashed with the day his assignment was due.

My personal favourite was the student who maintained his house was quarantined by police after a home invasion by bikies (I kid you not!). Needless to say I gave the student an extension on his assignment as: a) the bikies may have been his friends; b) the police may have been his friends; c) it may have been true, and d) if it wasn't true it was certainly original.

Still, it's difficult to be hard-hearted. My own excuses for late work (and of course they are all true) includes a laser printer that literally caught on fire; severe muscle spasm as a result of thinking a near-fifty year old unfit male can ride a racing bike like a Tour de France competitor; childbirth (my wife, not me!); chickenpox; and one frank admission that I simply ran out of time.

Perhaps a more interesting point to ponder is, what are the consequences of not meeting a deadline? In university, students lose marks for every day an assignment is late. If a lecturer regularly runs over his time limit he loses students. If a film goes past its deadline it usually loses money. But the film industry developed a clever solution to this: the completion guarantor.

A completion guarantee is a form of insurance offered by a completion guarantor company (in return for a percentage fee based on the budget) that is often used in independently financed films to guarantee that the producer will complete and deliver the film (Wikipedia). The completion guarantor even has the right to take over the film in order to complete it on time and on budget. Now that is scary!

Visions of men in black suits wearing dark sunglasses driving black cars come to mind. I can see that there would be a terrific niche market in becoming a completion guarantor for other industries – university students for a start. Why not use the concept in politics? Imagine if we hired the 'men-in-black' to make sure our elected officials actually did even half of what they promised. There's a fortune to be made with aspiring novelists, middle-aged guys who vow to get fit, people of any gender who make New Year's resolutions, or anyone who buys a part-works series. Looking around my office at this very moment, I have a 1974 pinball machine that is half restored, a scale model of the Titanic that is half built, a cornet that I can play half-well (a lot less than half actually), an unfinished novel, three drafts for non-fiction books, two script concepts, and a stationery cupboard that really needs sorting.

Maybe Australian Cinematographer needs to hire a completion guarantor to make sure certain writers (no names mentioned) finish their articles on time. Hang on … I have to go now. There's a large guy at my door wearing a black suit and sunglasses …

NEW GEAR

INITION SHOWCASE THEIR NEW ELEMENT TECHNICA QUASAR 3D RIG

BY NICOLA DALEY

Inition are the leading stereoscopic 3D production experts in Asia Pacific and Europe with unrivalled experience and a great track-record. Their Melbourne office has been open since 2007. Inition are behind many of the ground-breaking 3D productions you may have heard of in the Asia Pacific and Europe and are proud to announce they have a new 3D rig - the Element Technica Quasar, which is now ready to rent for all your 3D shoots.

The Quasar rig is designed for a variety of cameras including the RED, to the Sony F23/35 or the Arri D21. Designed as a premium solution, to compete with other high end solutions such as the Pace or 3Ality systems, it has all the features you'd expect from a higher end production package - convergence tracking, multiple alignment axes (pitch, roll and Z-Depth), a dedicated remote – and some new features you won't find on other rigs, like the ability to convert from beamsplitter to side by side mode. The Element Technica Quasar is a really rigid platform which eliminates any flex that will result in a disparity between the alignment of the two images. Primarily this is a mirror rig but it does have the option of going side by side.

In side by side mode, the two cameras are mounted on a plate next to each other. One is stationary while the other moves relative to its sibling. Generally speaking, the closer you are to a subject (and the longer the lens used), the closer the cameras will have to be to each other. As you bring the cameras closer together they will hit a minimum distance when they physically bump in to each other. At this point, you need to go to beamsplitter mode where the cameras are mounted in a right angle configuration (most drama shooting uses the beamsplitter mode). Placed at 45 degrees between them is a half silvered mirror. The top (left) camera looks down into the mirror and sees the reflection, the bottom (right) camera sees through the mirror. This configuration allows the optical axes of the cameras to be as close as you want, allowing for closeups that would not be possible in side by side mode.

To achieve great 3D, the two cameras must be perfectly aligned with each other as even the smallest discrepancy can create eyestrain for the audience. This is where the 3 axes of movement in the top dovetail plate comes in to its own. With pitch, roll and vertical shift, the Quasar can compensate for any of the inevitable tiny differences in the camera mounting that can be difficult to deal with on other rigs.

The Quasar uses a dual drive system – meaning there are two high torque motors that drive the front and back of the bottom (or right) camera plate. This enables the rig to shoot in parallel mode by driving both motors at the same speed, or to shoot converged by moving the drive shaft that is closer to the mirror a little more slowly. Thanks to some fancy custom electronics, the Quasar can track convergence, meaning as the cameras move apart, the point at which they cross (which corresponds to the screen for the audience) remains in the same place, allowing you to independently control the convergence point and the amount of parallax in the shot.

One of the other nice things about the Quasar is the integrated remote for convergence and interaxial control. Whereas cheaper rigs can require a bolt-on solution in the form of a c-motion or preston system to achieve remote controlled motorisation, the Quasar comes with an inbuilt solution that is compatible with both wired and wireless operation with programmable maximum and minimum stops on interaxial and convergence. The convergence is controlled by a large wheel on the right, while the interaxial has the choice of a smaller wheel on the left or a slider for operation.

Camera and lens alignment, which can be frustrating and time-consuming on other rigs, has been reduced to minutes due to the advanced alignment mechanism found in the Quasar full-sized 3D camera platform. When you change a lens the rig enables a quick realignment which should only take about 5 minutes, which usually happens while you are setting up the shot.

Element Technica are also developing a way to record meta data from the cameras so that a record can be made for the special effects unit. Element Technica have put a lot of resources developing 3D platforms, and they have another rig, the Neutron, for smaller bodied cameras such as the SI-2K or Scarlet, which has just started shipping. Perfect for underwater rigs or situations where a light mobile rig is necessary, the neutron can be handheld or placed on a steadicam with a self contained tether-less recording system for truly mobile operation.

Markus Stone, Inition's Head of Production, will be using a Red MX/Quasar and SI-2K/Neutron solution on *Bait* a feature film to be shot on the Gold Coast later this year.

For more information please call 03 9687 8638 or visit www.inition.com.au

EUREKA PACIFIC ANNOUNCES NEW CALDIGIT VR MINI HARD DRIVE

The CalDigit VR mini is an innovative, compact and bus-powered two drive RAID system, supporting a quadruple interface for easy connectivity. The CalDigit VR mini's modular design provides two removable drive modules and an easy-to-read frontside LCD.

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For more information please visit:

www.eurekapacific.com.au

ROBOCAMPRO FOR NEW GEAR

BY NICOLA DALEY

The ROBOCAMpro is an innovative and lightweight crane, jib arm and motion control rig rolled into one. ROBOCAMpro boasts slick architecture and remote control software technology. With its contemporary laser-cut, high grade aluminium shapes, black powder coated structure and metallic sapphire components, ROBOCAMpro looks as good as it feels. The stainless steel hardware, precision bearings, wheels, powerful DC servos, and custom electronics ensure smooth operation, reliability and longevity. ROBOCAMpro is designed around a central upright column, and this motorised jib/dolly can seamlessly rise and fall, tilt, rotate and track. The unit is easy to assemble and allows the operator via remote control, to create perfect sweeping camera moves, over and over again. Once you have locked your shot into ROBOCAMpro's program you can revise your camera moves using a simple time-based graph.

There are no messy wires as ROBOCAMpro uses bluetooth wireless technology to communicate with the computer. ROBOCAMpro has been designed with lightweight digital cameras in mind such as the Sony EX3, the Red Scarlet, or the Canon 5D. ROBOCAMpro has a counterweight system which runs via a cable straight down the throat of the central upright. This means the entire device can fit into the smallest of places. With the camera mounted and the remote controllers in use, the camera operator can simply walk away and control ROBOCAMpro from a more convenient location. The creative possibilities are endless.

For more information please contact:
Christopher Robin Collins at www.robocampro.com
tel +(61) 0418 476 853

THE RED AND PHANTOM GO UNDER

BY GEORGE EVATT

I am always on the lookout for ways to take better-looking underwater footage. Having build housings for several video cameras, including the Sony F900 and Panasonic Varicam, I felt the challenge to get a RED ONE camera into the water as soon as it was released. While the RED ONE camera has given us inexpensive high quality image capture and shallow depth, shooting underwater is very different to shooting above water. Some cameras that take superb topside shots just don't seem to produce good looking underwater footage.

Designing and building an underwater housing is challenging and exciting. You have to consider all sorts of things. It has to be simple yet adaptable to different camera configurations. You have to work out the weight of all the camera gear going inside the housing and then make sure it's going to have the volume to be positively buoyant.

You want to work out the centre of gravity so the housing sits well in the water. Of course it must be bombproof as far as leaks are concerned. You also need skilled help to get the precision mechanical and electronic work done correctly.

Housings are usually built out of aluminium, acrylic or carbon fibre. All have their pros and cons. I have only ever used aluminium, which is strong and reasonably light, but needs constant care as it does not really like saltwater. The RED ONE can get very hot during operation and I also had some concerns about it overheating when running inside an aluminium housing.

We were lucky that the RED ONE's boxy shape allowed for a pretty simple housing case. The first real challenge was lens functions. When making 2/3" HD camera housings everything was based around a Fujinon 13x4.5mm HD zoom lens. As the RED ONE uses PL mount cine lenses, I wanted the flexibility to use a variety of lenses, all of which have different physical dimensions and different focus, iris and zoom ring sizes and positions. We got around this by mounting the camera on a sliding plate and controlling lens functions via servo motors attached to the camera rails. This means you can use virtually any PL mount lens including the Arri 8r-8mm ultra wide and most Arri and Cooke primes and several zooms including the Optimo 15-40mm. To turn the RED camera on, you need to physically depress the power button at the rear of the camera. For this we made a little leg-like machine that will

gently kick the master power button on and off.

As the RED captures data in RAW, doing a white balance underwater is unnecessary. So the controls we chose to access through the housing were camera power, lens iris, focus and zoom functions and the camera record button. Monitoring underwater is done via a separately mounted Panasonic HD monitor that can show a waveform of the shot and also has a focus assist function, all assessable underwater. The housing will fit a RED hard drive and one large RED brick battery. However, power can also be externally supplied via cable to the surface, which saves time changing batteries. There is also a 100metre HD-SDI video split cable for topside monitoring.

When shooting underwater you have to be constantly vigilant about leaks. The safety features on this housing include three separate leak alarms, a window at the back of the housing so the operator can look inside for any signs of water, and most importantly, a vacuum pressure test facility to test that the housing is correctly sealed before each use. So far we have had no leaks, in fact I reckon the camera is safer in the housing at 20 metres depth than it is back in the hotel room. To monitor the temperature inside the housing while the camera was running, we installed a little digital thermometer purchased for $10 from Jaycar. This can be read while underwater and so far overheating has not been an issue with the maximum temperature inside the housing getting only about 4 degrees above the ambient water temperature.

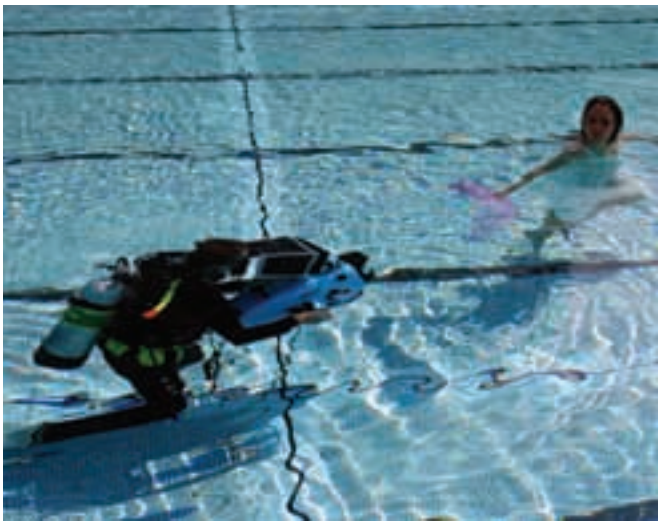
All up, this new underwater housing took around 18 months for construction, rebuilding and refining, with much help and advice along the way. We now have one of the most versatile underwater housings around. As a bonus, it not only works with the RED ONE camera, but also with the Phantom range of high speed cameras and very likely the new RED Epic and Arri Alexa cameras.

In these "off the shelf" times, designing and building something from scratch can be really rewarding but also a bit of a gamble. Fortunately, this new housing seems to have paid off. It has a very nice solid feel in the water and incorporates many features that I have come to appreciate over nearly 20 years shooting underwater. It is a simple, extremely safe and versatile underwater shooting system. And it's available for hire!

So far we have shot underwater on several feature films, some TVCs and wildlife docos. And how does the RED ONE underwater footage look? I love it! Check out the RED/Phantom underwater reel on our website. www.coralseatv.com.

Next... A 3D underwater housing for the EPIC...

www.coralseatv.com



SHORTENDS

THE FIRST TEL. OB

Prompted by recent correspondence in Prospero, (the magazine provided to retired BBC employees) John Trenouth explains how the Scanner got its name.

BBC staff have always referred to television Outside Broadcast trucks as "Scanners" despite the fact that very few people have any idea where the name came from. There have been a number of reasons put forward over the years, including a statement that the name derived from the similarity of mobile radar trucks (with their attendant scanner assemblies) used towards the end of WWII. However, the real reason for the name dates back to the early 1930s.

In 1928 John Logie Baird demonstrated 'daylight television' from the rooftop of his studio in Long Acre. For the first time he was able to produce images from outside the studio and realised that the ability to broadcast live pictures from any location, an 'outside broadcast', was vital to the future of television. His camera was very different to the electronic versions which would be in regular use within the next ten years. It was a mechanical drum with 30 mirrors around its edge and rotated at a high speed. Baird didn't call it a camera, he preferred the term 'scanner'. As the heavy metal drum rotated, the mirrors mounted on it scanned the scene being televised. The scanner was bulky, heavy and quite delicate. It also could only be moved very slowly when it was running, so panning and tilting were out of the question.

Regular 30-line television broadcasts started in 1929, using the BBC's 2LO transmitter on the roof of Selfridges late in the evening when the radio service closed for the day. The pictures were sent by post office line from Baird's Long Acre studio. Initially the broadcasts comprised two minutes of picture followed by two minutes of sound, then another two minutes of picture and so on...

It was not until the following year that the new Brookmans Park transmitter opened, thus allowing him access to two transmitters at the same time, one for picture and one for sound. By the time the 30-line service closed down (September 1935) there were around three thousand receivers and 'lookers-in' (the term 'viewer' had not yet been adopted).

The Baird scanner at the 1932 Derby

In 1931 Baird fitted the scanner inside an old caravan and parked it in the street outside to continue his experiments. Seeing the horses going up and down Long Acre on their way to Covent Garden market gave him the idea to try to televise the Derby.

The heavy wooden caravan was towed behind an ancient De Soto automobile and parked alongside the winning post at Epsom. The Post Office laid temporary land lines back to Long Acre and special dispensation was given to use the London National wavelength of the BBC for half an hour to cover the race. This, the UK's first outside broadcast, was not a huge success, mainly because the 30-line picture was tall and narrow (the 3:7 aspect ratio was chosen for head and shoulder shots) and the inability to pan the scanner to follow the race meant that all viewers saw was the blur of the horses flashing past the finish line.

The following year he was back with an improved system which contained not one, but three mirror drums. The centre drum produced the picture for the television broadcast, whilst the three drums combined to produce a much wider 'zone' picture on the screen of the Metropole cinema in Victoria - a sort of television version of 3-strip Cinerama. More importantly for the viewers at home, the scanner was arranged to look through a large mirror mounted on the inside of the caravan door. As the door was swung open, the scanner panned across the scene. So it was now possible to follow the action at the end of the race and it was, for its day, a great success.

Of course by now, everyone started referring to the whole caravan as the 'scanner' - especially as the caravan door was a vital part of the apparatus. A number of the Baird staff involved in these experiments were later employed by the BBC and they used the term "Scanner 1' to describe the EMI mobile television control room used for the 1937 Coronation. The name stuck and we've used it ever since.

Before leaving the subject of the 3D-line broadcasts, because they were on medium wave, they could be received all over the country. Usable pictures were even received across Europe and in North Africa. This compares very favourably with the official range of 25 miles from the Alexandra Palace transmitter when 405-line BBC television started in 1936. For those readers of a technical bent, the maximum theoretical bandwidth required for 30-line transimission is 13 KHz, which reduces to just under 10 KHz by applying the Kell factor. However, it's unlikely that

Baird's video amplifiers at the time could cope with more than 6 KHz - which was about the bandwidth of the 2LO transmitter. The domestic radio set used to receive the 3-line signals probably had even less bandwidth. Even so, the pictures were surprisingly good.

Following the recent interest among Prospero readers in old Scanners, I can confirm that the National Media Museum have two examples, a CMCR2 with EMI 2001 cameras and a CMCR5 with Philips LDK25 cameras. There are at least five more in private ownership, some of which have been lovingly restored. The oldest UK-made example still in near original (working) condition is in the collection of the National Museum of Australia. It's a 1952 Pye vehicle fitted with Pye Mk III cameras.

John Trenouth is former senior Curator of Television at the National Museum of Photography, Film and Television.

Reprinted with permission from the March 2010 Issue of Prospero.

FILM REVIEW

AUSTRALIAN RELEASE SEPT 2, 2010

REVIEW BY ANDREW L. URBAN

TOMORROW WHEN THE WAR BEGAN

SYNOPSIS:

Eight teenagers in the remote coastal town of Wirrawee set off for a weekend camping in the verdant parkland not far from home, as a simple adventure. But their lives are suddenly and violently upended by a war that no one saw coming, as a foreign army invades Australia and captures civilians in its path. Cut off from their families and their friends, they must learn to escape, survive and fight back against the hostile military force.

Seven teenagers - and an eighth they meet along the way - form what later becomes a guerilla resistance unit after an unnamed country leads an unknown coalition in our region in an undeclared war by invading Australia at three ports around the coast, including Cobbler's Bay (Port Headland and Townsville are the other two). But the film begins a few days before, when Wirrawee-via-Cobbler's Bay teenagers plan a comping weekend and gather friends and acquaintances to fill Ellie's (Caitlin Stacey) dad's 4WD.

The breezy tone of the establishing scenes plays like any teenage adventure movie, with the characters jostling and joshing with each other - like the running gag about posh town girl Fiona (Phoebe Tonkin) taking her make up kit along and rowdy larrikin Homer (Deniz Akdeniz) as the Greek loose cannon.

Their weekend away at a remote but idyllic spot ironically called Hell, becomes symbolic as they return to find something really bad has happened and their homes are empty, a dog is dead and both power and communications are down.

If you've read the book, all of this will be familiar and the revelations won't be fresh. And if, like me, you are not one of the one million people who have bought John Marsden's Tomorow books, you'll want the impact of these revelations to be more effective and powerful, more moving and dramatic than the film manages, and I daresay, fans of the books will, too.

Despite that, the film gathers itself into a tight little bundle as it moves into second gear and the invasion becomes a reality we can see - albeit restricted to Cobbler's Bay, which tends to undercut the drama of it. A few similarly chaotic scenes of the invaders distressing the population around the country would help give the film the scale it needs to really make it cinematic. Likewise, a single fighter plane is the only sign of resistance from our defence force - and they may take exception to that. This weakness deprives the film of its potential sense of dread and genuine fear, without which it struggles to get us involved and committed.

A few false notes and an ill-fitting soundtrack further distance us from the central drama of the characters, despite attempts at making them three dimensional. In rather restricted screen time (except for Stasey as Ellie) the cast struggle to establish their characters but do pretty well all round, and Colin Friels as a dentist having to try surgery makes his single scene work a treat. Chris Pang as Lee and Andy Ryan as the stoner Chris - the eighth member they pick up in unusual circumstances - deliver memorable characters with something extra, as does Ashleigh Cummings as the devout young Christian, Robyn, forced to make a tough decision at a crucial time.

So while it doesn't all ring true, there are some tense highlights and great technical work, including Ben Nott's high-class cinematography, while the crucial and spectacular explosion in the last third of the film will resonate with its target audience.

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BOOK REVIEW

REVIEW BY ROBYN TURNER BSc (Hons)

PUBLISHER: PENGUIN BOOKS FIRST PUBLISHED 1948

THE LOVED ONE

BY EVELYN WAUGH

Why is a book review being done for a book that is older than most of the readers (but not the editor!) of this magazine? It's about show biz of a sort, the show biz of death and funerals for both people and pets, and even 60 years after it was first published, it still resonates. (Struggling with the idea of death and funerals as show biz? Think Princess Diana and the Pope. Their funerals were huge international TV productions, watched by millions of people.)

Subtitled An Anglo-American Tragedy, *The Loved One* covers the life and times of a funeral parlour and crematorium for pets in California (where else). Darkly satiric and ironic, it's not for the sensitive and nor apparently, according to numerous reviewers, is the 1965 film adaptation. The characters, including the impossibly named Mr Joyboy, border on the nutter zone. Death, embalming and mortuaries maybe don't strike you as obvious topics for a humorous book but under Waugh's pen, they are. It displays the stark differences between American and English humour, simplistic versus the supercilious English humour of the world of Evelyn Waugh. Sixty years later, those differences are still as stark although perhaps the taboo around the use of death as a subject for a comedic novel no longer holds the impact it might once have had.

Unfortunately, there is a generation or two of Australians who may well be turned off this book (and others by Evelyn Waugh) for life as for some years, *The Loved One* was on the reading list for the high school curriculum and nothing kills interest in a book quicker than hours of reading cribs to pass exams and assessments.

Waugh wrote many books including *Brideshead Revisited* which many will remember as an acclaimed TV series (enjoying several recent reruns on free-to-air and pay TV) as well as a 2008 film. There may even be some who recall even better, *Brunswick Heads Revisited*, a wickedly funny Australian satire broadcast on ABC Radio in the early 1980's (yes I know, makes it old enough to have its own kids).

The Loved One won't appeal to everyone but for those who like their humour black and strong with a splash of weird, this will be rewarding.

CML SELECTION

BY DAVID WALPOLE

Photo by Chris Walpole

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http://www.cinematography.net/edited-pages/Rescue_Harness.htm

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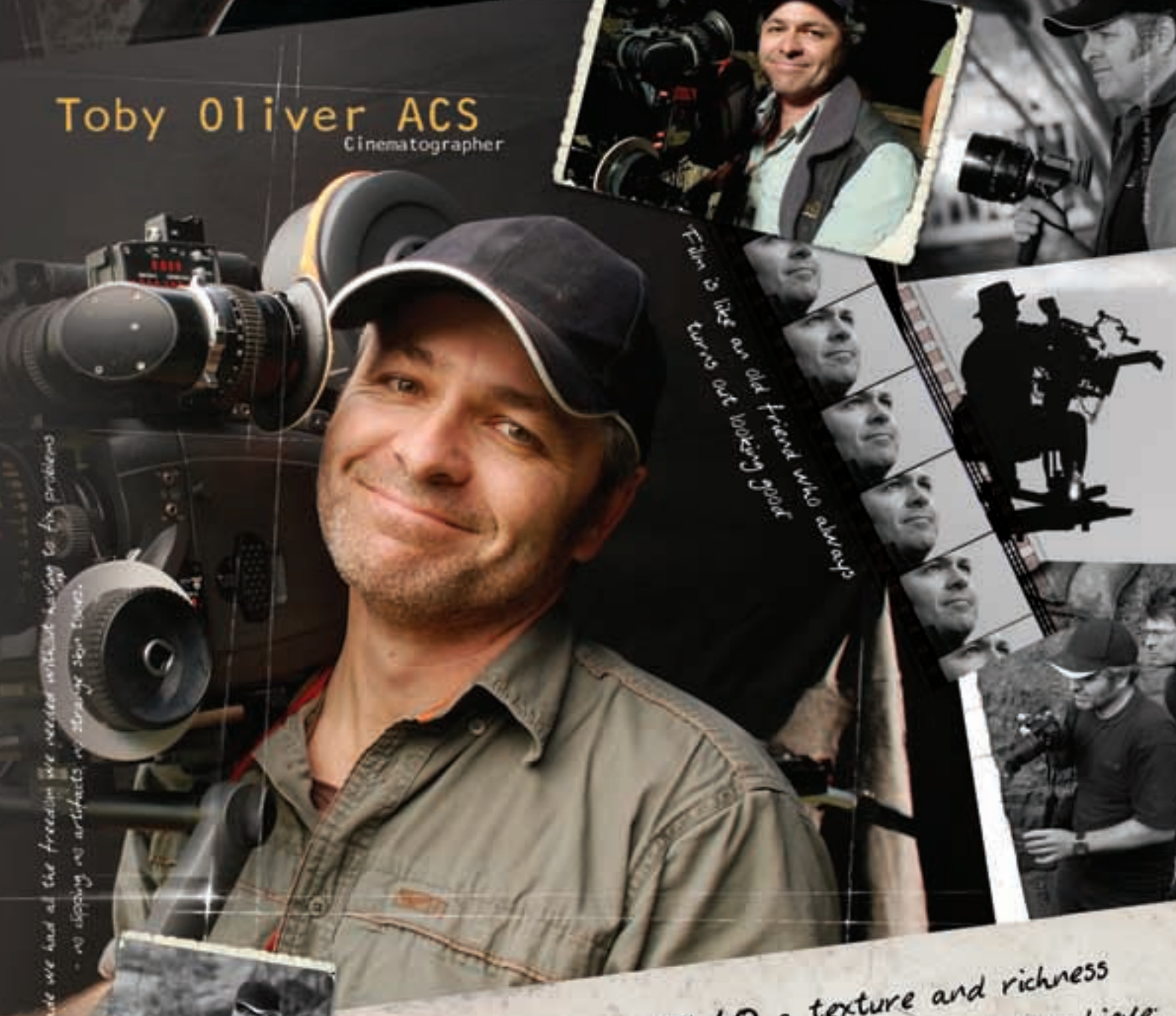
Toby Oliver ACS

Cinematographer



"Film gave **Beneath Hill 60** a texture and richness that I believe the electronic image is yet to achieve; for this movie it was the right choice"

We switched formats from digital to 35mm film during pre-production on **Beneath Hill 60** - I wasn't confident that digital would handle the low-level candlelight in the tunnels. I then force-processed the 5219 one stop with excellent results, minimal grain and true colour"

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