



OUTLANDER

Drama in the Scottish Highlands

On 6 March 1988, a professor of scientific computation began writing a novel, simply to learn 'what it takes'. Diana Gabaldon's writing experiment was published in 1991, the first of a series of eight novels that have gone on to sell more than 25 million copies worldwide. American cable and satellite network Starz commissioned the adaptation of 16 TV episodes, and work commenced on one of the biggest productions ever filmed in Scotland, in September 2013. With plot lines and appeal compared to the *Game of Thrones*, the airing of the first series in the US last autumn has already led to a surge in tourism to the Scottish Highlands. GTC member Andrei Austin shares his experiences of working as a camera operator on this major television series.

Outlander plot summary

A mixture of historical drama, romance, science fiction and swashbuckling adventure, *Outlander* follows the fortunes of Claire Randall, an army nurse at the end of World War II, who encounters a druid ritual and is transported back in time to the Highlands of Scotland in 1743 as war rages between Scottish clansmen and the English.

A long contract

I was already known to the *Outlander* production company Left Bank Pictures because I had filmed in Hungary earlier in the year for their series *Strike Back*, shown on Sky. As soon as I heard I'd been selected as one of two camera operators for *Outlander*, I got hold of the book, which I always do as prep so that I will be familiar with the storyline. Often the book is heavily adapted but at least it gives you a 'heads up' so that you can hit the ground running from the off.

Initially my contract was from September until just before Christmas. I would be working with David Higgs BSC as my DoP. To start with we were both contracted

to do just one block, which is not uncommon on long runs. In the event though, they asked me to come back; I asked how long for and they said "All of it!". I immediately had to rethink what I was about to do for the whole of 2014. We are all hostages to fortune... your whole month, day or even year can change with one conversation. However, this was a very well put-together production so I was happy to sign up.

Equipment

As on many dramas these days, we shot on the ALEXA, with two complete camera channels paired with a complete set of Cooke S4i lenses, from 14mm right up to 135mm. For zooms, we had a 15.5–45mm Fuji Alura plus a couple of 18–80mm Fuji Aluras and a 45–250mm Fuji. When we had a third camera available, this would often be used with the 45–250mm to 'fish for shots' or to pick up a specific shot at 250mm, while myself and fellow operator Ossie McLean ACO were covering the other shots.

Typically we would have the master camera on the dolly. The B camera might be on a slider and we carried a complement of these, from 3ft to 8ft. Set-ups might involve a dolly shot, Steadicam and/or crane shot (either Technocrane or jib) – or it could be a MoVI rig; we used anything and everything you can imagine! The most common set-ups, however, were on a Peewee or Hybrid dolly. Originally a lot of handheld was planned but that didn't transpire in the end. Things evolve and some shots require a more stable studio kind of camera set-up, some Steadicam, some handheld, others the MoVI... it's all contextual. You can't always prescribe how the camera is going to move.

We had two Steadicams available to us all the time, as Ossie McLean and I are both Steadicam operators. There were about 18 days in total when we had two Steadicams on the same scene at the same time, out of 203 days, so the Steadicam was used quite a lot. We had loads of Technocrane days and a couple of drone shots as well. We had the full gamut of kit!

Looks and LUTs

Before block one we had about three weeks' testing and various Look Up Tables (LUTs) were designed. Even though there might be a LUT applied to the camera, that LUT is 'non destructive' so it's not a permanent change to the colour scheme of the camera. Even if the LUT is uploaded during the grade, you don't have to use it because it's not 'burnt in' to the signal. Throughout the year we were sent various LUTs for different situations and applied these during the filming, knowing they could be scrubbed and a different LUT applied. However, that would be an extreme example of what might happen as obviously if you are using a camera platform like the ALEXA, which is perfectly suited to this sort of shoot, there's no point in designing LUTs that are going to be completely different, so the changes were very subtle.

We used the LUTs all the time on set. I have my camera set up so that

I can view either the LUT or the Log C image via a selectable button. So, if I am operating on something that is, say, very dark and low key, where you can't (with the LUT applied) see into the shadows or detail in the highlight areas, I will flick the switch temporarily over to the Log C image. This allows me to see what the camera will actually be recording and to spot any 'gotchas' like a flag stand or tape mark in the shadows, or a light stand in a highlight through a window. On low-key scenes, I might only look at the Log C picture, whereas on others I will flick over to the LUT, whether that's Rec.709 or whatever is applied. If I have an idea of what the director and DoP are aiming for in terms of mood, I can then adapt my operating accordingly.

Changing directors and DoPs

On this production the director and DoP changed from block to block while the operators and other crew members remained. This is a common pattern on long-running series, certainly in the US and some parts of Europe. The continuity of the crew is retained and the director, who has worked out and planned a particular storyline or script, comes along and 'plugs in' to the crew.

Each DoP has their own viewpoint; everybody sees the world individually and this is no different for DoPs. The way in which you are required to frame, operate and move the camera can vary enormously. So, for instance, Neville Kidd, who has done lots of *Sherlocks* and programmes like that, is very innovative in terms of camera mounts and has built some of his own camera rigs. Then you have David Higgs who loves Steadicam and handheld. Martin Fuhrer, on the other hand is not a big fan of Steadicam and prefers the camera to be in studio mode for structured shots. So it changes depending on both the director's storytelling and the way in which the DoP interprets this. Director Anna Foerster, who did blocks five and eight, loves wide-angle lenses, so

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It was very helpful to pre-test some scenes – especially the special builds – to guard against any surprises when we came to do it for real; an awful lot of planning goes into making stuff like this work and you can't just turn up on the day and hope for the best.



Technical rehearsal with the crew looking on



The Taurus vehicle with telescopic crane mounted – Andrei is operating from the trailer behind

you might do a wide master on a 21mm lens or even wider, whereas Martin Fuhrer (DoP on block 6) doesn't like wide-angles so might do the wide on a 50mm lens. There can be huge differences, but all equally valid.

American influences

On American productions, the producer will be on set all the time so there is instant feedback if a line needs to be changed or differently emphasised. They can and will whisper in the director's ear and suggest things. If the director has a query, then an instant response is available and there is that 'steady hand on the tiller'. It's not always necessary, but can be reassuring to have that person there.

Outlander was probably one of the best set-up TV productions I've worked on. They gave themselves time. We shot a number of wardrobe and hair colour tests that were sent to the relevant people in the UK and US to make sure everybody was happy with what they would be getting. We also shot tests for key scenes; for instance, there was a scene involving dancers around some 'Magic Stones'. These were fibre-glass standing stones that would be placed on location but we also had them available to us in advance in a studio. We needed to know whether the dance in and around the stones could be contained in our high-angle shots, so I did the

maths and worked out what height the crane would need to be and what lenses would be required and at what angles, to capture the dance they had been rehearsing for weeks and weeks when we arrived on location in the Highlands. It would be disastrous to go all the way up there and discover we couldn't get the shot. So, we put the stones up as they would be situated, and shot a test to make sure it would work.

The testing wasn't always this extensive but it was certainly helpful to test some scenes – especially the special builds – to guard against any surprises when we came to do it for real. An awful lot of planning goes into making stuff like this

work and you can't just turn up on the day and hope for the best.

I didn't find this shoot any more or less intense than other big productions I've worked on. You have to nail it. If you've got 30 horses running down a track and it takes 15 minutes to reset, you've got to be switched on. All those people – wardrobe, make-up, lighting – they've all worked their socks off; if you don't see their work, it all counts for nothing.

On *Outlander* there were amazing sets. One in particular, Castle Leoch, was huge, complete with flagstones, corridors and something like 800 candles, all of which had to be lit and tended, as well as gas chandeliers with gas piped in. All this had to be set up and all those candles extinguished between takes because of the heat. Even though we had proper ventilation, filtration and air conditioning, you don't want that many burning sources when you're doing a reset or relight. So, you have to get organised and get your shots right. You don't want to be wasting people's time.

Subtlety in SFX

The majority of special effects used were to 'enhance' the scenery as much of the story takes place in the Highlands and, while we were in Scotland, we weren't necessarily up in the mountains all the time. Also, sometimes there were vistas we needed with perhaps a castle in the background where there was none, and this was added in by Special Effects (SFX). This was very subtly and intelligently used, and absolutely brilliantly executed.

Another great use was for the character of Colum, the Laird, who in the story has 'Toulouse Lautrec syndrome' with very malformed legs. For the scenes in which his legs can be seen, the actor would adopt a gait that made him look malformed, and he would wear special green socks with fiducial marks on them so that SFX could track the movement of his legs and replace them with disfigured ones. This was absolutely brilliantly done. These weren't static shots either; we made no compromises in our camera movement and it is testament to the skill of the SFX team that it looks seamless.

Some of the SFX shots were storyboarded but not all. A typical scene was when we shot in the village of Falkland, where Claire and her husband arrive at their second honeymoon guest house and are walking across a street. We wanted to show the hills and mountains in the deep background but there were none. The shot was done on a jib and framed very low to the ground with lots of headroom so that we could insert the hills and mountains into the background. The visual storytelling was achieved in that one shot and the audience knows from it that they will be going up into those hills in the deep background.

Gripping stuff

To enable us to use the Technocrane on the rough terrain, we mounted it on a Taurus vehicle, owned by Bickers. This combination was absolutely brilliant and is something I would use again because it allows you to position the base of the Technocrane, or any crane for that matter, anywhere you want. We went up some ridiculous slopes with the Technocrane. Otherwise we would have had to use a crane that could be broken down but you pay a time penalty for that and it means bringing in a crew early. With the Taurus you could just drive it into position. The Technocrane is such a useful device for getting reach and height, and for achieving camera movement over rough terrain without

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laying decking and tracks. If you can get a Technocrane out there, you've got a lot of movement available. The grip Tim Critchell was fantastic.

Tim Critchell: "On the recce, standing at the foot of the hillock, they told me this was where the Standing Stones would be and that we would need telescopic crane movement. From my experience, and that of the DOP, we knew straight away that this location, with fairly steep banking all around and multiple positions required, would need the Taurus. We mounted a Moviebird 44 telescopic crane onto the vehicle and technician Andy Thomson found a viable route and

drove it straight up. Once we were there, repositioning the crane only took about 10 to 15 minutes. We also used the Taurus with 30' and 50' Technocranes in other locations."

Andrei's apps

I have a suite of software that I use to help me on productions. I use pCAM, Sun Scout, Shot Designer, RoomScan and Artemis. When the director is on set with the actors blocking, I will fire up Shot Designer on my iPad and plot the actors' movements. When it comes to showing the crew, I've already got a head start; I know where the actors are going to be and can start plotting camera positions and even lenses with the DoP and director, straight off my iPad. It's a really useful tool.

With Artemis, which is absolutely accurate, once you've programmed in the camera information and suite of lenses you're using, you can jump to a virtual lens and angle of view, and plot your shot with a high degree of accuracy. This works for any shots but is particularly useful for dolly shots. Once you've committed to a particular 'track lay' you don't want to have to rip it up. For a long time now I've used either a director's finder, or now Artemis, to very accurately plot the track, checking where it needs to be for a particular focal length, angle of view and height. The grip is there as you discuss it with the director and can mark it on the floor. Height is vitally important as this determines which camera mount you need. By the time the artists come back on set you are 90% there.

With a director's finder, only one of you can be looking through it at any one time so, in order to agree a shot, you have to hand it to the DoP and/or director. With the shot on your iPad,



Andrei in full flight with Steadicam

The Camera Team

A-Camera:

Camera/Steadicam Operator: Andrei Austin (associate BSC, ACO)
1st AC: Anna Benbow/James Harrison
2nd AC: Erin Currie
Camera Trainee: Scott McIntyre/John Young
Key Grip: Tim Critchell
Assistant Grip: Jon McCormick

B-Camera:

Camera/Steadicam Operator: Ossie McLean (ACO)
1st AC: Luke Coulter
2nd AC: Chris Maxwell
Camera Trainee: Daniel Hill/James Hogarth
Grip: Cassius McCabe
Assistant Grip: Henry Stone/Ronan Devlin

everyone can see at the same time and hopefully agree it. If you're not in agreement though, you can take a screenshot and say: "Look, there's an angle over there... this is what it would look like." So we might then put the B camera over there or do that angle later. Software is a huge part of drama production now.

The other software I use is RoomScan. With this you can go into a particular location on a recce and very quickly get the dimensions of a room on the iPad or phone, by going around the room and tapping it on the walls. It generates a plan of the room, which means you can start to look at where things might go. You can then import that room plan into

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Filming on board a rib with the ALEXA mounted on a 'Perfect Horizon' stabiliser

Shot Designer and plot in your actors and props etc. With Shot Designer you can actually animate moves in plan view so you get a dynamic representation of where your actors are going to be and how your cameras can move in relation to that. Again, this is a really useful tool for sharing with the rest of the crew and also going through with the director exactly what they have in mind. It saves a lot of misunderstandings on set.

Useful production apps



pCAM FILM + DIGITAL PRO

by Thin Man Inc – £20.99

24 bundled cinematography and photography apps including: depth of field; field of view (picture sizes); angle of view; relative sizes (for different sensors); colour correction; mired shift; and much more!



Shot Designer

by Hollywood Camera Work – Free

Includes: Camera design – speeds up camera diagram creation; Animation – animate characters and cameras in real-time; Shot list – writes itself while you work; Director's viewfinder/storyboards – lens-accurate camera angles; Sync and team sharing – sync scenes across devices and share with team.



Artemis Director's Viewfinder

by Chemical Wedding – £20.99

Artemis is a digital viewfinder for the iPhone and iPod Touch. It works in much the same way as a traditional director's viewfinder. Great for location scouting and making storyboards.



RoomScan

by Locometric – Free

RoomScan draws floor plans all by itself – touch each wall with your phone for dimensions.



Sun Scout

by Benjohn Barnes – £6.99

Sun Scout uses your iPhone's compass to tell where the sun will be at a specific time.

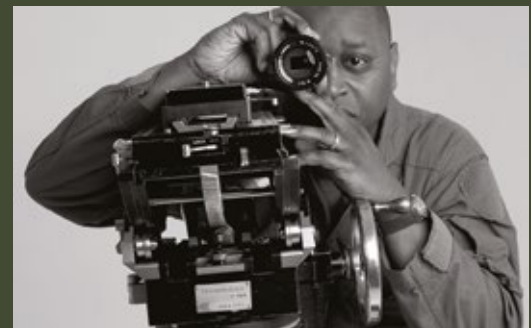
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I have a suite of apps that I use to help me on productions... software is a huge part of drama production now.

The other thing I do, which is software related, is upload a schedule onto iCal and populate that schedule with any bits of equipment we might need, above and beyond that which we normally carry. So, if we need a special lens on a particular day, or we're doing anything out of the ordinary, I'll note that in iCal. Then I invite everybody on the crew, as well as the production office, to share that calendar so we can all see what's happening at any particular time. I give the office and certain members of the crew 'read and write' permissions. This means there are no surprises. If the crew want to print it out in month view, list view or week view, they can do so themselves.

As we go to print there is still no confirmed news of a UK broadcaster or transmission dates, but the US is gearing up for the second part of Series 1 to start airing in April.

Fact File



If you want to see more photos of Andrei and the crew in action please go to:

http://instagram.com/outlander_starz

GTC member **Andrei Austin** started his career as a TV cameraman at the BBC, covering everything from current affairs, sport and State occasions to documentaries and commercials. Since leaving the BBC to go freelance, he has operated A-camera and Steadicam on numerous film and digital drama productions, including the Emmy award-winning BBC series *Waking The Dead*, *Silent Witness* and, of course, Starz/Sony's *Outlander*. He was also DoP on indie films *Wayland's Song* and *His Heavy Heart*. Andrei is an associate member of the BSC and also a member of the Association of Camera Operators (ACO). Website: www.andreiaustin.com

Tim Critchell worked for Axis Films in Glasgow, before going freelance as a grip in 2003. He works on a variety of commercials, features and drama productions.