

A VERY LONG ENGAGEMENT

For nearly 12 years, GTC member and freelance cameraman, Nic Holman, has been documenting a unique project. He has been following the 'return to flight' restoration of a classic British military aircraft that last flew over 20 years ago.

The documentary has been self financed and for Nic, being both producer and film-maker, this has been a steep and challenging hill to climb, especially since the main work is taking place in Mississippi, involving frequent expensive trips.

Still with some way to go it has, thus far, been an interesting journey.

XS422



NIC HOLMAN

It started with a day off
A little over 11 years ago I began a very long and, as it has transpired, ambitious documentary journey. At the time, having worked through a traditional apprenticeship of camera assistant, focus puller, then camera operator, I was about a year into being a lighting cameraman and DoP. I'd also made the transition in business terms from sole trader to limited company. Many of my buddies were being spirited away to interesting and sometimes foreign locations to shoot documentaries, work that was proving illusive to me, so I decided that one way round this was to originate something myself. I also felt that to have a limited company and use it for nothing more than shooting was a waste, so with these thoughts

in mind I was loosely hunting for a documentary project. I both thank and blame Johnnie Walker (the DJ not the whisky) in equal measure for the last 11 years as it was his Radio 2 show I was listening to when I found my project!
What happened was...
Arriving late into a conversation between Johnnie and his 'Mystery Voice' contestant Phil, an RAF engineer, I was instantly drawn into Phil's account of his spare-time activities. He and a group of mates had recently embarked on restoring back to flight an English Electric Lightning. For those not in the know, this was an iconic British designed and built 1960s Cold War Fighter/Interceptor, capable of speeds in



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▲ English Electric Lightning, XS422, under restoration at Stennis International Airport, Mississippi

▶ Shooting with the PD150 in the earlier years of the restoration, a member of the restoration team explains from the cockpit what he is doing

◀ The distinctive shape of the English Electric Lightning is best seen from the rear – the vertical stacking of the engines can be seen in the shape of the jet outlets



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excess of Mach 2, now exceedingly rare in airworthy condition. There were only three worldwide when I first got involved. The project had two bases, one in Leicestershire and the other Mississippi, where the aircraft was to be restored and would be flown. My father had enjoyed a long career with the RAF and so as a child I had followed him around the world, quickly developing a love and fascination for military jets. I had a particular fondness for the Lightning, as indeed many people I've met through the project do, from my first introduction to them in Cyprus in the late 1970s. I was very quickly hooked; this was what I had been looking for, and had it not been for a perfectly timed day off I would have never found it at just the right moment.

Mississippi bound

With no contact details for Phil and not even a surname, I had just a few clues to go on – that he was based in Norfolk and worked on Tornado aircraft. With my knowledge of the service I had two choices and took what turned out to be a lucky punt: I wrote to the Commanding Officer of RAF Marham with an explanation of who I was and asking if he had an engineer called Phil who was restoring a Lightning? Two days later when my phone rang I was greeted with a cheery hello from Chief Tech Phil Wallis .. "I'm the guy off the radio."
A few weeks later, I was sitting at a table in an Indian restaurant in Cambridge with Phil, Andrew Brodie and Max Waldron, three of the four owners and instigators of the project. At the time I was very much a virgin producer, with none of the skills and experience I have since picked

up. In my mind I was a cameraman who wanted to make a film about an aircraft restoration... and I hoped they were going to let me. I also hoped that in addition to my huge personal interest, my offer to come on board at zero expense to the project would be enough to persuade them. I didn't know if they would expect a fee or whether I was one of many producers they were considering.
I reasoned that as a voluntary project they wouldn't be working 365 days a year but perhaps going to the USA two or three times a year, something I felt I could keep up with financially as I was going to be self-funded.
It turned out that our first meeting was a very happy meeting of minds and there were no other candidates. I was as much hoping they would welcome me on board as they were flattered that anyone was interested in what they were doing! We spent most of the meal with me explaining that I wouldn't be in their way or bringing shed-loads of kit and crew with me, and also that my RAF family gave me an empathy with the RAF volunteers involved, as well as ensuring that most of my questions on camera would be sensible ones.
The next planned trip to Mississippi was in the diary, just over a month from our first meeting, and I was duly invited to come along and see if I was certain they were worth following, while at the same time the restoration team could make sure they were happy with me, a sort of sale or return for both of us. So, in October 2000, I took my seat on a plane at Gatwick, bound for Gulfport on the southern Mississippi coast, and ultimately an airport I would come to treat as a

second home, Stennis.

Early kit and format choices

This is probably a good time to share my thought process on shooting and production choices. Embarking on a documentary that could take as long as five years to complete (my gross underestimation at the time) threw up a number of important technology and kit decisions.
Casting my mind back quite a few years, Beta SP was king of video in 2000, although DigiBeta and DV CAM were hovering in the wings. Originally, I wanted to find a medium that would last the duration of the documentary and felt some sort of digital media would be the way to go. I didn't own a

Sony DSR-PD150, which seemed a very good compromise. The only real negative was the non wide-angle lens, but even with an adaptor the camera was still small.
Sound-wise I purchased a couple of Sony ECM77s for interviews and a Sennheiser ME66 shotgun mic – fantastic choices with hindsight. I had discounted radio mics early on as the management of these in a team of individuals would have been difficult and, I reasoned, might tie me down too much as things developed.
In the early years of the project, I didn't take any lighting with me to reduce kit and I've pretty much stuck to that. I had seen photographs of the hangar interior prior to my first trip and certainly during the day

My goal is certainly to get my work broadcast, ideally on television, but I want the freedom of shooting it in my way and in my own time and finding the story angles myself, rather than handing over editorial control to someone else

camcorder then and, while the quality would unquestionably have been good, the Beta option would have been expensive to hire or buy.
Further thoughts were that I would be shooting in confined interior spaces around the aircraft and the size of a Beta camera and lens would be somewhere between difficult and impossible in that environment. As a director/cameraman/sound recordist I also wanted to minimise kit so I could concentrate on getting good material.
So, after much conversation with friends, colleagues and the bank manager, I set myself up with a

there was a reasonable amount of ambient daylight. I also knew that the restoration team would be using practical lighting under the aircraft and in the interior spaces so took a chance on that for the first trip. It has certainly made life simpler using the practical lighting available, although on my most recent trip I added a small LED to my kit which is self-powered and great for quick interviews and of particular use in the cockpit where much of the instruments and structure are black or dark in colour.
When I started this documentary, 4:3 was still very much the norm

for TV, although 16:9 was beginning to filter through. Thinking that the PD-150 would see me through the project, I resolved to shoot 4:3 but 16:9 safe. This was partly to do with how the camera shoots 'wide-screen' and also to get the best possible quality out of the sensor. Historically, I considered that if the project were to go on a number of years, this would mean I had a 'wide-screen' project if needed. Subsequently I have gone on to shoot 16:9 with later cameras, and indeed HD, so a fair mix of media and formats. The way in which the film finally reaches the viewing public will determine how I integrate the different formats and generations.

My goal is certainly to get my work broadcast, ideally on television, but I want the freedom of shooting it in my way and in my own time and finding the story angles myself, rather

than handing over editorial control to someone else. I have a number of good editor friends with an interest in and understanding of aviation, and my plan is to involve them at a later stage to bring an outside eye to what I've been doing to produce the finished film. I also thought the best way to tackle the subject matter was solo and 'embedded' instead of with a full crew and director.

Trip 1 – learning curve

Going from lighting cameraman to producer/director/camera op/sound recordist was a huge leap of faith and one I instantly both enjoyed and fretted about in equal measure. Now it comes fairly naturally and I don't see myself in the separate roles, I just get on with it; but back in 2000 when I first landed in Mississippi



▲ Restoration engineer Dave Tylee working around the air turbine gearbox in the rear fuselage

Stills

As a natural extension of my filming, I have been responsible the past few years for making a photographic documentary of the project as well. Most of the team now have digital cameras and some are keen photographers but, in addition to being a focal point for their images after the trips, I have also been shooting high-resolution images for publicity purposes for the project and I hold the media library.

It doubles the workload but if work is taking place over a period of hours in one location, then there is plenty of time to shoot both video and stills.

things were very disunited. I'd be rolling happily through the day filming and then taking 'production breaks' to get my head around what I'd shot; what the story was; what shots I was missing; whether I was over- or undershooting. The first trip was a tough learning curve.

I was also undecided as to a style, or indeed whether I needed to get hung up on this issue? I'd worked on other people's documentaries so knew the choices and wanted to adopt a strategy for my project. One key decision I did have to make was my journalistic approach:

Friendship and trust in a documentary of this nature is, seemingly, the natural way to go if you want to capture the real story. I'm convinced now that most of the guys and girls forget why I'm there and rarely notice the camera

whether to be an observer, or a participant. Should I remain cold and impartial and capture all the tantrums and disagreements? Or get involved with the team, be their confidant, catch them for short conversations and be the voice off-camera they would talk to? Being so personally interested in the project, the natural choice was the latter. Over the years I've become life friends with all the participants. No longer am I just the documentary-maker, I've very

Southern coastal Mississippi is predominantly swamp – millions of acres of lakes, rivers and bayous. Roughly translated, this means high humidity or, specifically, 105 degrees F and 90% humidity! It would be unfair to single out the PD-150 alone for humidity issues, as I've had problems with all the tape cameras I've taken across the pond, but you'll appreciate that finding on Day 3 of the first trip that the camera didn't want to focus, or do much actually, was quite a wake-up. With an entirely electronic camera I was stuck for nearly two hours unable to film anything while the camera acclimatised. Frustrating to say the least. I couldn't even manually focus as the camera lens was entirely software-driven.

Most of my equipment lived in Pelican cases. The Peli range is great for travelling but once on location the climate seal creates too much of a jump in conditions from storage to use. It was a valuable lesson to learn. These days I have a shelf in one of the hangar cabinets that my kit lives on night and day; that way it is always at the external temperature.

I didn't take a tripod on my first trip as it was really just a look-see, so all the shooting could be handheld or with improvised camera support. This turned out to be a huge hindrance and I quickly opted for shooting predominantly on a tripod. With tasks taking a while it is often covered best with time-lapse or return visits to a similar viewpoint. On top of that there is sometimes the need to make adjustments once the picture is set or go and find a participant... all easier with the camera on the sticks.

Upstairs, Downstairs

One of the problems I fight in the hangar to this day is access to every part of the aircraft itself. Filming on or around an aircraft restoration is definitely an acquired skill. Since the Lightning was reassembled in 2003, it has sat in the hangar on jacks, save for a couple of rare visits outside. Access to the top of the aircraft, referred to by the team as 'upstairs' is via two scaffold towers with ladders, either

side of the cockpit. These are the only way up top but also double as work platforms and so, not surprisingly, are often busy. It is not unusual to start filming an engineering or electrical task on the ground and for the investigative process to then take it to a completely different part of the aircraft, invariably upstairs or to the rear where the twin vertical engines are housed. I aim to get the best possible shots to tell the story but not get in the engineers' way or become a hindrance. This is often no easy task, as it often involves a lot of shinning up and down ladders, navigating my way across wings, avoiding exposed pipes and fragile components, and leaning through engine bays. I am acutely aware that the engineers have a job to do and that time is precious but, if used sparingly, the guys are fairly amenable to refitting something for my benefit to facilitate a close-up or reverse angle. I'm gradually educating the team to 'Wait for the camera!'

A little help never goes amiss

The great thing about self-shooting, and particularly a self-funded project, is that people want to help in whatever way they can. I've made some great friendships in Mississippi, as have the rest of the team, and many are associated with the airport or flying. Consequently, I've had access to some fantastic camera platforms, lent by both civilian and military incumbents, all gratis. These have added great production value and variety to the hangar shots and GVs.

Being a small (for America) regional airport, it is much easier to organise things that would be impossible elsewhere. I've had countless flights with my camera in light aircraft and helicopters, as well as a two-seater microlight (which, however, I do not recommend as a camera platform... how all the screws were not shaken out of my camera by the constant vibration I will never know!) And I've even had an offer from the local Air National Guard for a ride in a C-130 aircraft to shoot air-to-air when XS422 finally flies, an offer I will definitely be taking up. Basically, I have access to the control tower and entire airfield whenever I need it.

UK shooting

As well as filming in Mississippi, the project also has a UK base of operations at Bruntingthorpe in

Leicestershire. Aviation enthusiasts will know this as the home of the British Aviation Heritage Collection, with many working examples of historic jets, including two Lightnings. UK aviation laws do not allow any of these jets to be flown, but a couple of times a year an open day affords the public an opportunity to see the aircraft run down the runway for an 'aborted take-off'.

For this project, Bruntingthorpe is a spares and restoration base before assets are shipped to Stennis to be fitted to the aircraft. A great deal of my initial filming on the project took place here and early on demonstrated the enormous task ahead of the restoration team. There was a good variety of content to cover, including spares sorting and recovery from the airframes there and I also recorded some good interviews. The bleak weather that often invades Leicestershire will make a good contrast to the blue skies of Mississippi in the finished film.

More recently I have been out and about with my Canon 5DMk2 DSLR getting some key interviews with former pilots and GVs of the old flying stations. With an aircraft that started service in 1959 it is an inevitability that many of the former pilots and bases are disappearing and I'm conscious that there is a limit to how long an audience will want to sit and watch guys tinkering with spanners in a hangar, so I want to grow the story to include recollections from those who worked with the aircraft.

Editing

It's probably worth sharing a few words on the editing process, such as it is so far. Naturally, the biggest issue after nearly 12 years' shooting is media management and the sheer volume of rushes. Aside from the hours of tapeless media shot in November last year, including the UK interviews originated on the 5D, I have in excess of 370 DVCAM tapes, each with around 40 minutes of rushes on average.

It was a few years into the project before I gave much thought to the editing as it was my original intention to complete the film once the restoration project was complete. When I started I was also not an editor but in 2003 I bought a Macbook Pro and Final Cut Pro editing software with a view to teaching myself. Once I'd got the hang of the editing basics, I set myself the task of digitising all



▲ Rigging a GoPro in the lower engine bay to shoot timelapse sequences of the work being carried out there



▲ Filming Dave Yates, one of the propulsion team, fitting a fire extinguisher in the lower engine bay in November 2011 with the Canon 105

English Electric Lightning

Totally British designed and built supersonic Interceptor. In service with the RAF 1959 to 1988. Also saw service in the Royal Kuwait AF and Royal Saudi AF. XS422 is a twin-seat trainer aircraft, formally with the Empire Test Pilot School, RAF Boscombe Down.

Length:	55ft 3" (16.8m)
Wingspan:	34ft 10" (10.6m)
Height:	19ft 7" (5.97m)
Engines:	2 x Rolls Royce Avon 301 afterburning turbojets
	Dry thrust 12,530 lbs each
	Thrust with afterburner: 16,000 lbs each
Max Speed:	Mach 2+ (over 1,300mph)
Range:	850 miles (cold power)
Service Ceiling:	Officially 60,000ft but documented occasions up to over 80,000
Armament:	2 x Red Top or Firestreak Missiles



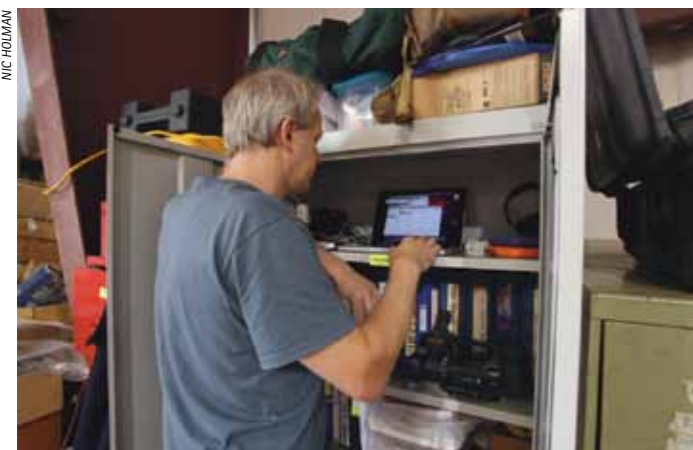
I don't think there is any right answer to camera choice when you start what you think is a five-year project and it goes on for nearly 15. Who knows what the broadcast standard will be in 15 years from now?

the rushes to ProRes format. Ingesting around 250 hours of material was a project in itself! The mammoth task of editing the actual documentary has yet to begin.

Hurricane Katrina

One of the things I hadn't bargained for when I started filming my documentary was that the biggest hurricane to hit the Gulf Coast in over 40 years would become part of the story. In August 2005, the wires started buzzing with news that a hurricane was building in the Gulf of Mexico. This was not unusual as the area is susceptible to hurricanes and tropical storms, to the extent that there is a hurricane 'season' along the southern coast of the United States.

What was unusual was the massive strength and size of this storm, and what was alarming was its trajectory ... straight towards Stennis Airport. By the time we realised there might be implications for the aircraft it was becoming increasingly difficult to contact anyone locally as an evacuation order meant most of our friends had packed up their families and houses and were heading rapidly north away from the coast. We had simply to resign ourselves to letting nature take its course. For the restoration team there was the dawning reality that five years of hard graft might well be about to be scattered in little pieces across the Mississippi coast, while for me, I was looking at a sudden termination of my



▲ My 'office' in the hangar at Stennis, on my most recent trip. For reasons of cleanliness and overnight security I took over the top shelf of one of the lockable cabinets in the hangar. In the cupboard are the 13" MacBook Pro and two Lacie backup hard drives as well as chargers. Also in shot the Canon 105.

▼ A timeline of the cameras and formats used so far on this 12-year project

documentary.

It was a full two weeks after the storm hit before we began to get patchy reports on the situation at the airfield. By some quirk of fate XS422 has survived, although the hangar floor was flooded under 2ft of water so there was some damage to spares and assets. But the Lightning itself had miraculously remained intact.

Meanwhile, the area was declared a major humanitarian disaster and tourists were definitely not welcome. The local authorities were allowing only limited access to the area. When the flood waters subsided our hangar had become a staging post for local national guard units as one of the few buildings left standing on or near the airport, so there seemed little point in going. In terms of filming the aftermath, the local TV stations were covering it admirably and so I will be turning to their archives for some footage for my film.

My first visit, post-Katrina, was actually February 2006, six months on. The devastation was still very much in evidence and I was able to record a series of trips out with the restoration team to see the local area, exploring the devastation, with them acting as commentators. Logistically that trip was my most expensive, with only a couple of hotels and car hire facilities in operation and rates at a premium. With my producer hat on, I noted a nightmare spike in costings.

November 2011 trip

Comparing my kit bag from my first trip to Stennis back in 2000 to that on my last trip in November 2011, the contents are very different. For a start, this was my first trip not committed to tape. Choosing a camera was a tough choice and something I did a lot of research into. My initial thoughts had been to take my Canon

5DMk2 as I have a great selection of lenses for it and, in terms of size, it would work well around the aircraft's cramped interior spaces. I had a couple of concerns though, and one that ultimately relegated it to 'B' camera status was the less than perfect audio quality and fiddly audio operation. I recently purchased a Tascam DR100 digital audio recorder (I know others are using the Zoom H4N) and the results are excellent but, while it's great for interviews and static situations, it's not ideal for running around shooting actuality, plus it's another thing to monitor batteries and cards for, and physically an extra piece of equipment. I quickly decided I would be better off with a camera that recorded on-board sound.

Having made the decision to use practical lighting on location, I was concerned with getting around the 60Hz flicker. The Sony HVR-Z1 was very easy in this respect; simply shooting at 1/60th cured it. Using the 5D in video mode is not so straightforward as even changing the shutter speed does not fix this because of the way the software is set up. I'd heard good things about the two Canon offerings, the XF305 and 105, and ultimately I was very fortunate, through the then GTC Chairman Graeme McAlpine, to be able to hire a Canon XF105 from Dreamflight, a charity supported by a number of GTC members. This kept my costs down as well as helping out Dreamflight. So, I went to Stennis in November with my 5D, a couple of L-series zoom lenses, an XF105, and a small LED stand-alone light.

The other major consideration with going non-tape was media back-up. Both the XF105 and 5D shoot to CF cards so parity there, but I was unsure how much I was going to shoot on the month-long visit so resolved to

buy enough cards to cover a full day and then also put in two Lacie rugged 500GB drives so that I could backup two copies of all the rushes and stills via a MacBook Pro laptop.

One further new addition to the kit on this last trip was a GoPro minicam which proved great for very unusual shots and angles. It's something I will use a little more on future trips, where appropriate. I also experimented with some time-lapse in both the cockpit and engine bay with good results. (The menu on the GoPro1 is a little bit of a head scratch as many of you will empathise with, but worth the effort.) This all added up to a fair bit of kit - probably the most I've taken, but the results were worth it.

As you can see from the photograph I was able to commandeer a clean shelf in the hangar as my own personal 'mission control' and was easily able to transfer rushes while continuing to shoot. Some kit, like the tripod and various cables, now reside permanently in Mississippi to lighten my travel bag.

Danger: Keep Out

I recently enjoyed the GTC workshop 'Life in the Firing Line' and it occurred to me that a Hostile Environments Course wouldn't go amiss for Mississippi. There is an alligator fence around the entire perimeter of the airfield but, as one of the locals pointed out early on, it doesn't keep out the snakes (highly venomous rattlers and cottonmouths are particularly prevalent)... this after I had just waded oblivious through long grass to get a cracking shot of the wind sock at sunset. We've all seen our fair share of the local reptiles and once a ninja-style aerial change of direction narrowly avoided me treading on a snake next to the hangar, but fortunately no bites yet.

The mosquitoes, however, have been a lot more successful and despite industrial quantities of insect repellent no-one has gone un-nibbled.

What next?

The question I always get asked is, when will you finish your documentary (or, are you still doing that plane thing)? In my mind, the closing sequence of this film is XS422 lifting off dramatically into a clear blue Mississippi sky with the restoration team cheering and congratulating one another. The restoration project has thus far survived on the financial backing of Andrew Brodie and huge generosity in terms of hours and skills given by the restoration engineers and volunteers. If first flight was dependent on these factors alone, then we'd be just months away but like all ambitious projects it is totally at the mercy of future funding.

The project line is, if someone writes a blank cheque (or more specifically one for £300,000), then in a little over a year from now that dream will be realised. For now I am happy to follow the project for as long as it takes. I've recently started to look at whether there is enough interesting material to create a series rather than a single feature-length production, with perhaps an episode per year of the project. This way I could start to see some return on my investment (which has been significant so far), regardless of the end date for the restoration. In the meantime, the footage I've shot stands as a great portfolio piece and may well serve to get me further commissions.

Final reflections

To produce and shoot your own documentary is a fantastic experience and I have learnt so much. I would recommend it to anyone. Twelve years

and counting, to date, affords a lot of hindsight, so I naturally reflect on what I would do differently. I wouldn't swap the experience I've had or the friends I've made, but my next documentary will most likely be in Europe or the UK. The cost of filming on another continent has been high, with airfares, accommodation and transport to pay for even before the camera comes out of the bag. I reached a tipping point a few years ago when I had to decide whether I could afford to carry on, but I'm glad I did. I considered my investment to that point, both personally and financially, and then imagined how I'd feel the following November knowing that the guys were in Mississippi and I was stuck in a damp grey London. I resolved that I'd come so far it would be insane to let it go.

I don't think there is any right answer to camera choice when you start what you think is a five-year project and it goes on for nearly 15. Who knows what the broadcast standard will be in 15 years from now?

If I was starting the project today, I'd go for the Sony PMW-500 and probably the soon-to-be released FS700 for low-light situations and filming in small spaces. The one thing I would definitely add for a future project if there were the budget would be a sound recordist!

If anyone would like further information on the restoration, or a little more detail on anything I've written, then I'm very happy to field emails. The restoration can be found at: www.xs422.com

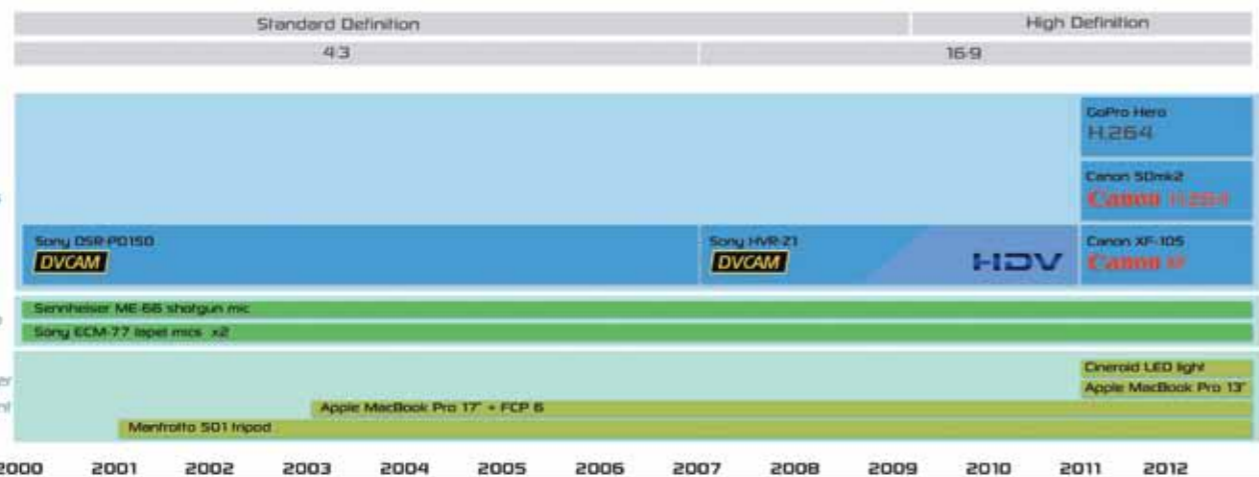


Fact File

Nic Holman is based in London. Originally studying photography in Cambridgeshire he moved to London to work as an assistant and photographer in advertising. After a number of years building a photographic career, Nic was introduced to Mark Bloomfield, a lighting cameraman, with whom he worked an apprenticeship as assistant cameraman and focus puller. After a couple of years' on-the-job training it seemed right to spread his wings and work for other cameramen as well as Mark.

Subsequently Nic has worked as a camera operator and in the last 10 years as a lighting cameraman, DoP and producer on a wide variety of commercial, documentary, television and corporate commissions through his company Picture Palette Ltd.

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