ARRI NEWS

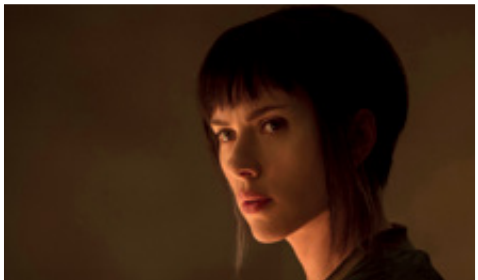
NAB ISSUE 2017

SKYPANEL

Creative on-set options expand
with new SkyPanel Firmware 3.0

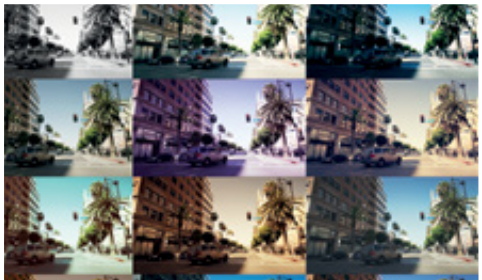
ALEXA SXT W

New upgrade sees ALEXA SXT become
a fully wireless camera system



GHOST IN THE SHELL

Jess Hall BSC captures with
ALEXA 65 on the anime remake



ARRI LOOK LIBRARY

Pre-programmed looks for
AMIRA, ALEXA Mini and ALEXA SXT

EDITORIAL

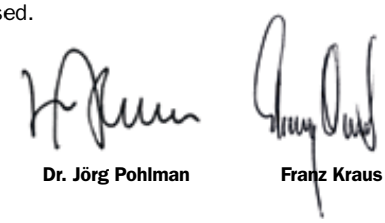
DEAR FRIENDS AND COLLEAGUES

This year we mark 100 years since ARRI's humble beginnings in a tiny shop here on Türkenstrasse, Munich. The birthday itself is in September, so our *ARRI News* at IBC will contain more detailed historical coverage, but in this issue we share some thoughts on what the centenary means to us. The spirit of innovation that motivated ARRI's founders is alive and well today – the article about our research into virtual reality is a perfect example.

Our cover image is a behind-the-scenes photo from the recent SkyPanel showreel, which can be viewed on our website. Part of the *Pure Creativity* campaign, it highlights the continually expanding creative options afforded by SkyPanel LED lights. At NAB we are announcing SkyPanel Firmware 3.0, bringing new features such as lighting effects, source matching, and a high-speed mode.

Software updates is a common theme. Flexible system architecture and refinements that respond to user feedback are cornerstones of our approach to delivering long product life cycles and dependable returns on investment. This issue presents some of the new features being introduced with SUP 5.0 for AMIRA and ALEXA Mini, including the ARRI Look Library and improved multi-camera options. Meanwhile the Wireless Video System is opening up new ways of working with ALEXA SXT.

As we went to press, we heard the sad news of the passing of our close friend Michael Ballhaus ASC. Michael loyally used ARRI cameras throughout his career, from his early productions in Germany with Rainer Werner Fassbinder, to his later high-profile movies in the US and his long collaboration with Martin Scorsese. He always stayed in touch, providing valuable feedback, and many of the features he politely requested found their way into our camera systems. To countless other cinematographers Michael was an inspiration; to us he was a member of the ARRI family, and will be sorely missed.



Dr. Jörg Pohlman **Franz Kraus**

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Franz Kraus (left) and Dr. Jörg Pohlman
Photo: Tom Fährmann

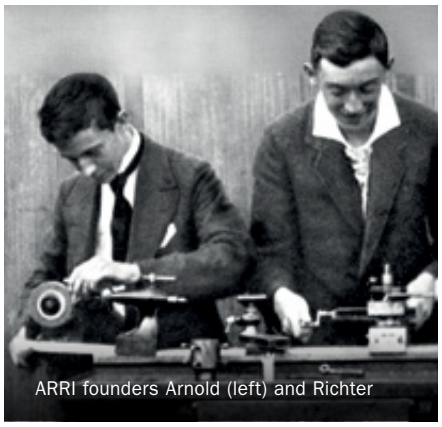
100 YEARS OF ARRI

Executive Board members Franz Kraus and Dr. Jörg Pohlman discuss ARRI's past, present, and future.

In September 2017 ARRI will celebrate its centenary. What started in a small former shoemaker's store in Munich 100 years ago has become one of the world's most innovative leaders in the film industry, with close to 1,300 employees and various subsidiaries worldwide. Reflecting on a rich past and positive about a bright future, Franz Kraus and Dr. Jörg Pohlman of the ARRI AG Executive Board share how ARRI views its place in the world of cinematography today.

How will ARRI be celebrating this historic anniversary?

Jörg Pohlman: We are marking our centenary with celebratory events and projects focused primarily on September, the actual month of the birthday. We're very proud of our history and look forward to sharing some wonderful stories and content later this year – put together with the help of many of our friends across the worldwide film industry. Even more exciting than our past is where we are as a company in 2017, and the values and vision we carry into the future. ARRI was founded by two passionate, film-obsessed teenagers; that same energy and exuberance still defines the company today. We're 100 years old, young at heart and looking ahead to even greater things.


ARRI founders Arnold (left) and Richter

What did ARRI learn from shifting to become a digital camera manufacturer?

Franz Kraus: The conversion from analog to digital taught us that the diversity of our product range and – more importantly – the engineering skills acquired during our DI developments helped us adapt to a shifting technology landscape, since it was our work with the ARRISCAN that paved the way for ALEXA. It also taught us that our most valuable assets are the level of trust in our brand, the extraordinary talent of our employees and our very close relationships with filmmakers.

JP: Looking back over ARRI's 100 years, of course 90 years or so were analog and only the last 10 years have really been digital. I think it's important to see that ARRI has already undergone many internal changes that were inherent with digitalization. For example, we have tripled the amount of people working in R&D and in our Camera Systems business unit over the last five years or so. We are in the midst of this process, which is an exciting part of the ARRI history. Digitalization is a huge challenge but it's also a huge opportunity for ARRI.

FK: Our founders were never afraid to go into new applications; it was camera, it was lighting, it was laboratory equipment, it was medical. Probably the reason why we are able to enjoy our 100th anniversary in good health is that we have managed to stay concentrated, we have always listened to the industry and we have never been afraid to do something new.

"ARRI was founded by two passionate, film-obsessed teenagers; that same energy and exuberance still defines the company today."

Does the large increase in TV drama production bode well for ARRI and for the future of high-end production value in general?

FK: ARRI cameras have been used on television productions since the 1950s, so operating in both the TV and feature film markets is not new to us. However, television today is better and more cinematic than it ever has been, so we're seeing ALEXA and especially AMIRA – with its Multicam feature for live broadcasting – used as much for TV as for feature films. The emergence of streaming content services has not pushed image quality requirements down, as some feared. On the contrary, content providers are looking for ways to set their programs apart, so we can be confident in the future of high-end production. After extensive testing, Amazon Studios chose ALEXA and AMIRA as their cameras of choice for UHD and HDR programming, which shows that they are serious about maximizing overall image quality. As good as television is now, we also believe that seeing feature films on a big screen is still very special and the ALEXA 65 system provided by ARRI Rental is a response to that, making sure that going to a movie theater feels like a different, more immersive experience.

How would you define the ARRI brand and its place in today's market?

JP: The fact that there are more manufacturers out there now only makes it more important that we stay true to the principles that have sustained and defined us for the last century. Quality and reliability – traits for which ARRI products are renowned – are more important than ever. The same goes for long-term return on investment, which in today's fast-moving industry requires modular hardware and upgradeable software. These priorities make our camera and lighting equipment more expensive to develop, but what other digital system has remained as relevant, for as long, as ALEXA?

FK: ARRI prides itself on being a long-term professional partner to the global film industry. We have never walked away, instead facing difficult times by redoubling our efforts and increasing investment in R&D. The fact that we offer such varied products and services, covering all sides of the industry, gives us a unique perspective and allows each division to benefit from the expertise of all the others. For example, our involvement in postproduction helps us to develop efficient camera workflows and to provide end-to-end solutions for emerging trends such as HDR.

What is your central message to filmmakers in 2017?

JP: One of our biggest messages to the filmmaking community in our centenary year is simply a request to keep talking with us. We greatly value having a dialogue with filmmakers; we are anxious to find out what they need and to discover ways to give it to them; we appreciate hearing how our products have helped to tell a story or overcome a challenge; we enjoy seeing careers develop over time. This is an exciting period in cinematographic history and we've never been more enthusiastic about the possibilities of the future.

ALEXA SXT GOES WIRELESS

The new ALEXA SXT W model, with built-in video transmitter, forms part of a complete ARRI Wireless Video System.

In a move that will increase efficiency on set, ARRI has integrated a high-quality and low-latency HD video transmitter and a WiFi radio into the new ALEXA SXT W model ("W" for Wireless). Based on the popular ALEXA SXT Plus, the SXT W will replace the ALEXA SXT Plus and ALEXA SXT Studio models. As always, there are attractive upgrade options for existing owners of ALEXA SXT EV and ALEXA SXT Plus cameras.

The new hardware will be accompanied by software upgrade SXT SUP 2.0, which adds improved HDR monitoring, support for current SxS PRO+ and CFast 2.0 cards, quicker frame grabs, various WCU-4 and lens motor features, and other refinements.

Having a video transmitter built into the ALEXA SXT W makes the camera smaller and lighter than it would be with an external transmitter. It also means fewer cables around the camera and fewer associated problems, since cable failure is by far the most common technical hitch on set. Camera setup and power-up will be quicker, and productions will be able to move faster.

In addition, the integrated WiFi radio opens up a whole range of options, starting with wireless color management on set and continuing with wireless camera remote control using the ALEXA Web Remote. Other exciting WiFi options are currently under development.

The ALEXA SXT W forms part of a new and complete ARRI Wireless Video System, along with a stand-alone video transmitter for use with other ARRI or third-party cameras, and a stand-alone video receiver that picks up signals from either transmitter. At the heart of the system is technology from market leader Amimon, with special hardware and software modifications to comply with ARRI's stringent performance and quality requirements.

An extensive accessory range will include various mounting brackets, antenna extensions and the handheld Director's Monitor Support (DMS-1), as well as a specially adapted Transvideo monitor with a built-in receiver for the ARRI transmitters. Whether using this monitor or others, the modular system allows for a compact and efficient setup. An extra power-out on the video receiver, for example, permits a single onboard battery to power both the receiver and an attached handheld monitor.

For the director, cinematographer, assistant, or anyone else on set, a monitor feed from the ARRI Wireless Video System increases creative control and oversight without adding clutter to the camera configuration or potential difficulties for the crew. From the protective collars on the connectors to the versatile mounting options, all of ARRI's expertise has gone into the ergonomics and durability of the system. Designed for real-world usage on professional sets, every component is spray and dust proof, constructed from rugged materials, and has a wide operating temperature range.

Interference between different radio frequencies can be a time-consuming issue for camera crews. The ARRI Wireless Video System eliminates this issue because it works harmoniously with ALEXA SXT W's other radio-based offerings: the WiFi and the ECS, ARRI's proprietary camera and lens control system. Since ARRI now fulfills all wireless requirements, crews can be sure there won't be any problems on set. The high-quality video feeds from the ALEXA SXT W and stand-alone transmitters are long-range, uncompressed, and encrypted for safety. Audio, timecode, and REC flag are included in the zero-delay signal, and up to four receivers can be used per transmitter.

The introduction of a built-in wireless video transmitter is a significant upgrade for the ALEXA SXT and reflects ARRI's commitment to continually improve the SXT platform with additional functionality. Further hardware and software developments are in the works.

Wireless Video Receiver (WVR-1)

Wireless Video Transmitter (WVT-1)

The Battery Adapter Cage (BAC) for Gold or V-Mount allows operation of the WVT-1 with any other camera

Director's Monitor Support (DMS-1) in single monitor configuration

Get ready to unplug - an integrated video transmitter allows faster setup and more efficient operation

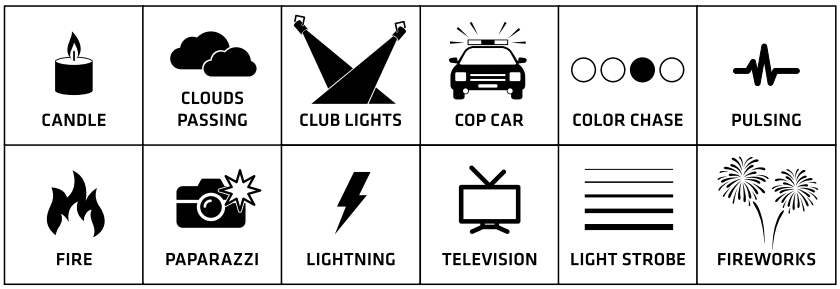
NEW SKYPANEL FEATURES

The latest SkyPanel firmware update introduces new features such as lighting effects and source matching.

The popular SkyPanel family of LED soft lights continues to improve with its third major firmware update. Bringing 10 amazing new features and numerous refinements, SkyPanel Firmware 3.0 is a free update that can be downloaded by users and installed in any SkyPanel fixture. It allows for more control and creativity than ever before.

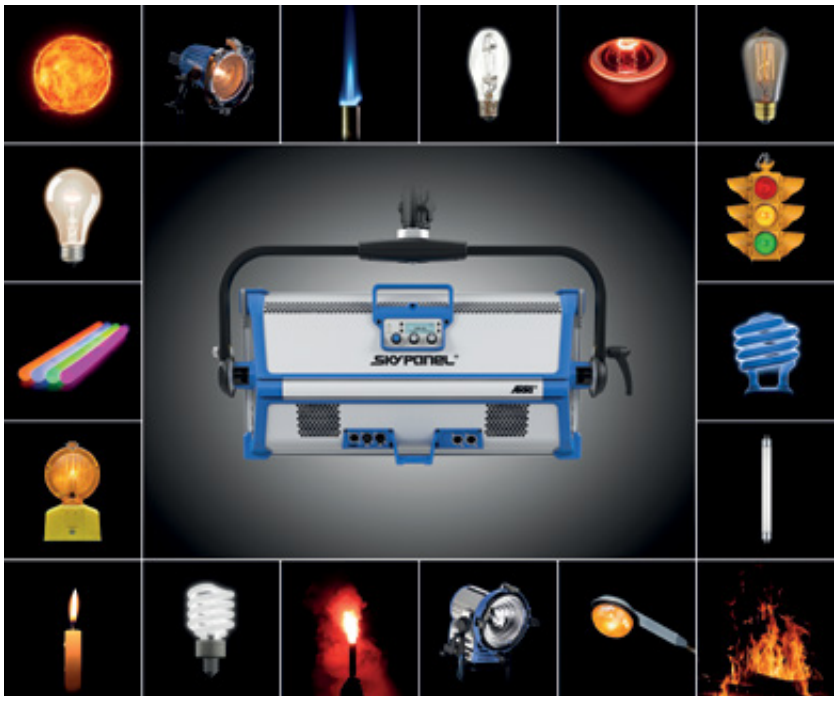
LIGHTING EFFECTS

Changing the game for on-set lighting effect generation, this feature permits users to choose and manipulate 12 effects without the need for a lighting console or hours of programming. The lighting effects – candle, clouds passing, club lights, color chase, cop car, fire, fireworks, light strobe, lightning, paparazzi, pulsing, and television – have several adjustable parameters that can be customized according to individual requirements.



SOURCE MATCHING

SkyPanel's calibrated light engine makes it possible to reproduce virtually any color. SkyPanel Firmware 3.0 takes further advantage of this by including 46 pre-programmed color matches to commonly found light sources such as tungsten, high-pressure sodium vapor, cool white fluorescent, and candle. Now it is even easier and faster to match a location light source, by simply selecting it from a list.



HIGH SPEED MODE

The much-requested SkyPanel High Speed Mode allows users to shoot at virtually any frame rate and shutter angle. It has been tested up to 25,000 fps and down to a two-degree shutter angle with no adverse effects on image quality. Say goodbye to flicker and roll bars forever.

sACN IMPLEMENTATION

Streaming ACN (sACN) is fully implemented in SkyPanel Firmware 3.0. This communication standard allows for many modern lighting consoles to communicate directly with the SkyPanel using Ethernet-based equipment. The SkyPanel is also smart enough to detect whether it is receiving an Art-Net or sACN signal and will adjust accordingly, with no setting changes.

RGBW CALIBRATED COLOR SPACE

RGBW mode is a great way to generate colors by adjusting the intensity values of each of the four LED channels in the SkyPanel. There is now the option to select a calibrated RGBW mode that will still allow for the adjustment of red, green, blue, and white levels, but in a calibrated color space that yields consistent results across SkyPanels.

SKYPANEL WEB SERVER

It is now possible to change all SkyPanel settings using any web browser. Simply connect the SkyPanel to a network via the EtherCon connector and use any browser to access the SkyPanel webpage generated by each fixture. Settings can now be adjusted from devices such as a mobile phone or tablet, without having to touch the SkyPanel itself.

MORE PRESETS AND PRESET DMX CHANNEL

SkyPanel Firmware 3.0 sees the addition of eight factory presets and preset selection via a DMX channel. With a new total of 10 factory presets that include popular color temperatures, HSI values, and gel colors, it is now faster and easier to select frequently used colors, even after a factory reset.

FREQUENCY SELECTION

This feature allows fine-tuning of the frequency of the SkyPanel's light output to adjust for slight flicker or roll bars that might occur when shooting at uncommon frame rates or shutter angles. Pick from 10 different frequencies that could reduce or eliminate small amounts of these image anomalies, while maintaining full control over intensity and color tuneability.

ENABLED MENU

With so many great features packed into the SkyPanel, it might seem difficult to know which ones are active at any given time. The new enabled menu lists all features in the SkyPanel and their current setting. With a quick glance you can review and change all settings in one menu.

ONBOARD RGBW MODE

SkyPanel users have always been able to control the RGBW LED channels via DMX, but it is now possible to switch to RGBW mode and adjust the different LED color channels directly on the control panel. In addition, these values can be stored as a preset for easy access later.

Download SkyPanel Firmware 3.0:
www.arri.com/lightingsoftware

Photo: Take Five/Hulu © Hulu 2016

LED LIGHTING CASE STUDY

Cinematographer Colin Watkinson reveals how he lit a key scene in the TV series The Handmaid's Tale with ARRI SkyPanel and L-Series fixtures.

Working alongside director Reed Morano ASC, a cinematographer in her own right, Colin Watkinson developed the look for a new 10-part adaptation of Margaret Atwood's classic dystopian story, *The Handmaid's Tale*. Looking to make frequent, subtle changes to color and intensity, Watkinson turned to ARRI's color-controllable SkyPanel and L-Series LED lights; here he explains how he used them for one particular scene.

Tell us about this scene and the general lighting requirements.

It takes place in a bedroom, where the handmaid Offred is subjected to a conception ritual called "the ceremony" by a character known as the Commander, with his wife also present. The scene is uncomfortable and unpleasant, so we had to convey that feeling. Being at night, the lighting was driven by practicals; we also decided to keep the main curtains at the windows open, with just a little bit of light and color coming through secondary net curtains to give a sense of the outside and of depth.

What fixtures did you use for those window lights?

They were SkyPanels. Initially they were directed into bounce so we could have shadows from foliage outside, but later in the season, as it got towards winter, we turned the SkyPanels straight onto the windows. They all went back to a deck, so we could

Cinematographer Colin Watkinson

easily adjust the colors and intensity levels. This is what I love about them, because I don't like the lighting to stay the same; I like to tweak things a bit so that a room feels slightly different every time you're in it. That's closer to reality and it's so much easier to achieve with LEDs.

I also had four diffused SkyPanels above the room's beautiful curved ceiling, which I got them to make in four sections so we could pull segments out. The SkyPanels let me push light down and introduce the tiniest hint of blue. It was almost imperceptible but it's definitely there, giving a slight ambiance over and above the practical lights.

Did the SkyPanels bring other advantages?

They are very maneuverable, so it wasn't a problem if I needed to ask my gaffer Jonathan Gaudet to move them around the night before we shot. You haven't got skirts and other bits, so they are much quicker to work with than a space light. Once you've got the cabling in, you can just say where you want to point them because they are so directional and versatile. Then there is the power consideration, which I'm not too involved in but I know there's a cost saving. It's the same with the L-Series, because you can plug them directly into the wall on location. Jonathan had never worked with these ARRI LEDs before, but he took everything on board and got his guys engaged with them. In the end he just loved them and he'll be using them as much as he can in the future.

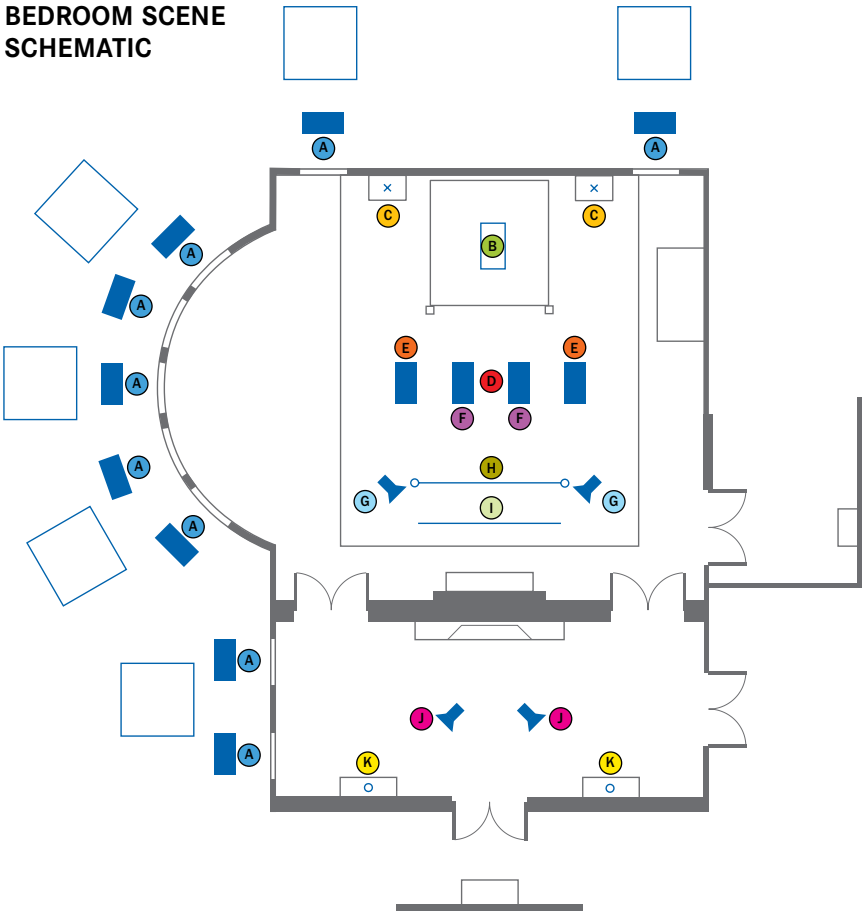
How did you use the L-Series lights in this scene?

The Commander was lit with two L10 fixtures bounced through a 4x4 mid-gray diffusion. We very rarely used anything white because it would ping the light around too much, so we'd use duller bounce and transmit through the mid-gray. Then I balanced it to get the right background separation and adjusted the color to exactly what I wanted on his face, which again would have taken a lot longer with tungsten. Having the L-Series let me play with color and see the results immediately.

Does LED lighting help when you've got practical lights visible in the scene?

Absolutely. It means you don't need to worry about the practicals because you have this really powerful tool up your sleeve to balance the rest of the scene. You can adapt and experiment so quickly and so cheaply, without wasting time cutting gels. With the ARRI LEDs I can go anywhere, I can change from night to day in minutes and that's a huge bonus. The speed is just phenomenal.

BEDROOM SCENE SCHEMATIC



- A All exterior SkyPanels: 8,000 K ½ + green
- B Skirted LitePad: 3,200 K
- C Bedside practicals: 60 W at 30%
- D Practical chandelier: 25 W bulbs at 20%
- E Outside SkyPanels: 7,000 K at 5%
- F Inside SkyPanels: 3,200 K at 5%
- G L10s: 5,600 K at 25% RHS, 50% LHS
- H Mid-gray transmission
- I Bounce
- J L7s: 5,600 K at 60% bounced off ceiling
- K 60 W practicals

= 8x8 unbleached muslin

ARRI LOOK LIBRARY

An extensive collection of creative looks pre-programmed into ALEXA Mini, AMIRA, and ALEXA SXT cameras.

From Software Update Package (SUP) 5.0 for ALEXA Mini and AMIRA cameras, ARRI is introducing an exciting new way to implement high-quality looks. The ARRI Look Library puts on-set look management within the reach of all productions, not just those with the time and budget to develop bespoke looks prior to shooting.

Offering 87 looks in three intensities, the ARRI Look Library caters to a huge variety of different shooting scenarios. The looks are numbered within nine themed groups: application, black-and-white, contrast, environment, film, period, season, special, and tinted. In a sense, the looks can be thought of as being similar to different film stocks, each providing a unique but repeatable aesthetic when combined with the cinematographer's choice of lenses.

All ALEXA Mini and AMIRA Premium cameras shipped from May 1, 2017, will be priced to reflect the built-in Look Library, while cameras shipped before that date can acquire the feature as an upgrade once SUP 5.0 has been installed. ALEXA SXT cameras will also be able to utilize the Look Library with the release of SXT SUP 3.0.

By establishing a standardized repertoire of looks, the library makes it easier for cinematographers to work with looks on any production. Often there is no budget for extensive look development during preproduction, or not enough time in the final grade to create and work with numerous different looks. In situations like these, the ARRI Look Library will allow filmmakers to make creative look choices on set, giving all departments the opportunity to become familiar with the final intended looks and to work within them.

A defined vocabulary of looks, consistent across all ARRI cameras equipped with the Look Library, will reduce complexity for cinematographers while giving them a varied palette with which to experiment. Creative collaborations will be made easier – whether over large distances or between different units on the same production – and time savings facilitated in postproduction, since scene-specific or even shot-specific looks can be implemented long before the final grade.

The 87 looks have been developed by ARRI Media, ARRI's postproduction and creative services business, based in Germany. Additional looks inspired by customer feedback are likely to be added to the library in the future, and users have the option to tweak looks using iPad-based tools such as Pomfort LiveGrade Air, thanks to the Camera Access Protocol feature of ALEXA SXT and – from SUP 5.0 – AMIRA and ALEXA Mini. Individual looks can be commissioned from ARRI Media for specific color spaces such as P3 or special requirements such as HDR.

ARRI Media has also created an accompanying free iPhone app that provides an overview of the library, giving users an easy way to explore possible looks whether they are on set, scouting locations, meeting with other heads of department, or sitting at home.

MASTER ANAMORPHICS ON JOHN WICK II

DP Dan Laustsen DFF combines ARRI/ZEISS Master Anamorphic lenses with ALEXA XT on the successful John Wick sequel.

Photos: Niko Tavernise © Lionsgate

John Wick: Chapter 2 **is that rare thing: a sequel to a hit movie that is even better received than the original. Re-teaming star Keanu Reeves and director Chad Stahelski, this second outing brings in cinematographer Dan Laustsen DFF, who spoke to ARRI about his lens choices on the film.**

To what degree did you want a fresh look for this second film?

On the first film they worked with different anamorphic lenses, but found it hard to control the flare, so they basically had to shoot the night exteriors with spherical lenses. I wanted to approach it another way and I talked to Chad about shooting everything anamorphic, rather than jumping back and forth between the two.

> “We were able to move fast, shooting handheld when it was required, or on a Steadicam or crane.”

Is that what led you to the Master Anamorphics?

Well, all the films I’ve done for the last few years have been with the Master Primes, which for my money are the best lenses on the planet. I like their very clean and sharp look, so I wanted to try the Master Anamorphics, although we tested a lot of other anamorphic lenses as well. I thought the Master Anamorphics were fantastic, but Chad wanted to retain some flare, which of course they don’t really do because the lens quality is so high. Luckily ARRI Rental US worked out a great solution that gave us the flare we needed.

What was the solution?

We were talking with them about the film days, when you would put nylon stockings behind lenses, and whether we could do something similar. They came up with the idea of specially adapted internal filters for the ALEXA XT, with varying numbers of horizontal lines, or baffles. These could be thin wires for night scenes or thicker nylon for day scenes, and they could be combined with NDs. I was very happy with the effect, and Chad loved it too, because you got nice flares off the highlights but the image was still extremely sharp.

The whole movie was shot with these flare filters. For me they were preferable to using uncoated lenses because I had total control. Sometimes with flaring you get the blacks milking out, but we were able to keep them black and keep the incredible sharpness of the Master Anamorphics, while creating exactly the right amount of flare for different situations.

Was the speed of the Master Anamorphics helpful on this shoot?

In general I’m not a wide-open DP, I prefer to shoot between T2.8 and T4. Of course now and then you have to shoot wide open and in those situations it is very useful to have faster lenses. We shot wide open with the Master Anamorphics for some high-speed stuff in Rome, where we had a lot of action, and their performance at T1.9 is amazing.

What was your overall impression of the optical performance?

One of the reasons I chose the Master Anamorphics was because they are so sharp from corner to corner, and from bottom to top as well. I’m not a big fan of anamorphic fall-off, especially not for this film. We wanted a slick, high-contrast look for the movie, and that old-style anamorphic softness would not have worked. As I said, we shot a lot of tests to find the right lenses, and I have no doubt that we made the right choice.

Were the lenses easy to work with on set?

I shot the movie exactly as if I were shooting with Master Primes, with no worries about limitations or needing more light. We were able to move fast, shooting handheld when it was required, or on a Steadicam or crane. It helps that the lenses are all the same size. Of course with anamorphics and the high-quality ALEXA sensor you have to get the focus right, but we had the best focus pullers in the world and everything came off very well – it was great.

Learn about the Master Anamorphic Flare Sets, an alternative approach to creative flare effects: **www.arri.com/flaresets**

Cinematographer Dan Laustsen DFF

AMIRA®
NEW MULTICAM LOOKS AND FEATURES

AMIRA SUP 5.0 software update further refines Multicam mode, a flexible, open interface for multi-camera broadcast applications.

Photo: *Heimatsound* © Daniel Delbeck / BR

SUP 5.0

Available for all AMIRA models, the Multicam mode makes the exceptional image quality of ARRI's ALEV III sensor – also used by ALEXA – available to productions within the multi-camera broadcast sphere. Through a Multicam setup, the AMIRA's shallow depth of field, unrivalled dynamic range, and natural colorimetry can lend a cinematic look to live broadcasts, music concerts, TV soaps, and other fast-paced, multi-camera productions.

First introduced with AMIRA Software Update Package (SUP) 3.0, Multicam was refined in SUP 4.0 and will be further improved with some exciting new features coming in SUP 5.0. Uptake of the Multicam mode has been enthusiastic, reflecting an increasing demand for high-quality imagery in the wider broadcast market. AMIRA Multicam shoots to date have included major US comedy shows, Broadway stage productions, fashion shoots for clients such as Balmain and Victoria's Secret, TV talent shows, corporate events, and concerts with artists such as Beyonce, The Who, Pearl Jam, and many more.

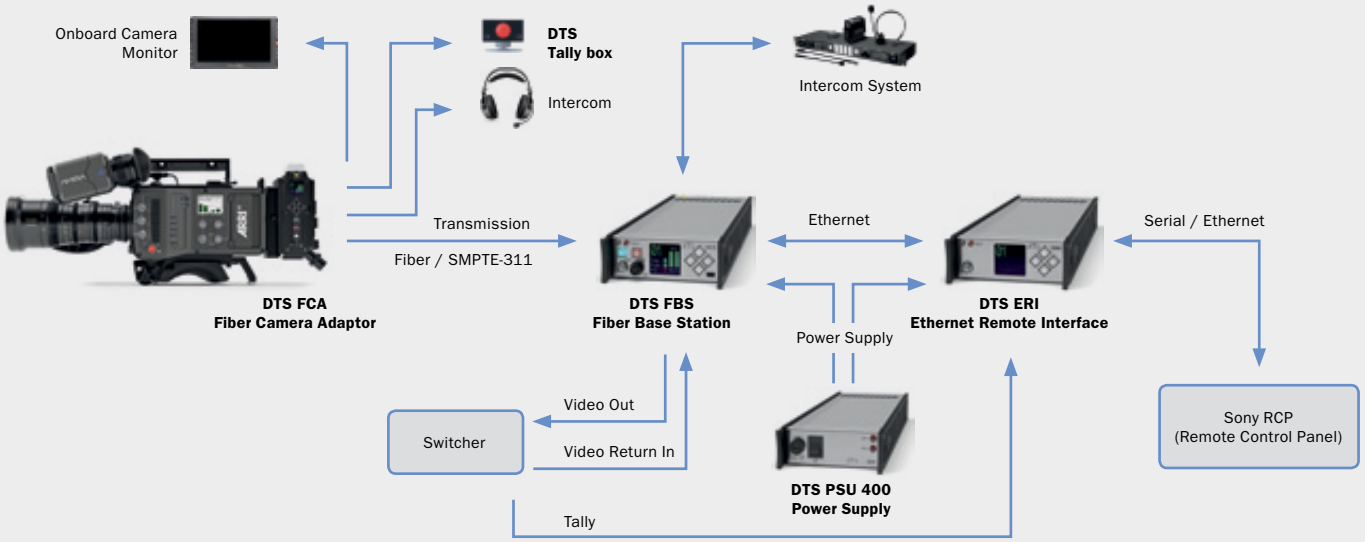
At its core, Multicam is a simple and flexible interface that can be used with virtually any transmission system required. It allows the image parameters of multiple AMIRA cameras to be remote controlled using a Sony RCP (Remote Control Panel), including iris setting.

ANY TRANSMISSION SYSTEM

In order to accommodate customers who want to source as many elements as possible from one vendor, DTS transmission system components that have been optimized for AMIRA Multicam are available directly from ARRI sales centers. The fiber transmission system from DTS is an attractive solution because it is compact, has all the functionality required, and offers good value for money. However, it is not the only transmission system that can be used.

AMIRA Multicam was designed from the outset to be as open and flexible an interface as possible. While the DTS components will suit many users, others may prefer to go with a different fiber solution, or a wireless radio transmission system. Since AMIRA Multicam is agnostic when it comes to a transmission pipeline, it will provide the same production benefits no matter which system is used to connect the cameras to the base station or CCU.

AMIRA MULTICAM DTS HD SETUP



4K OUTPUT AT 60 FPS

The big new Multicam feature being introduced with SUP 5.0 is dual 6G UHD-SDI support, which improves the cameras' SDI output data rate sufficiently to allow external 4K UHD recording at frame rates up to 60 fps. Many multi-camera broadcast productions prefer to record at 4K, even if the content will be down-converted for transmission. The increased spatial resolution is best shown off by also increasing the temporal resolution – upping the frame rate in order to reduce motion blur.

PRE-LOADED LOOKS

SUP 5.0 will allow creative looks based on 3D LUTs to be loaded into AMIRA and used in Multicam mode. An individual look for a production can be created in advance and loaded to the cameras, while the image parameters can still be fine-tuned with the RCP, just as in a standard workflow. Footage shot on location or acquired elsewhere will also become much easier to replicate in a live environment. The ARRI Look Library being launched with SUP 5.0 will make an entire catalog of varied looks available to AMIRA Multicam productions, allowing them to adopt an even more cinematic visual approach. In addition, it will become easier and faster to match multiple cameras by using equalized looks generated from color chart frame grabs.

SKYPANELS IN VOGUE FOR FASHION EVENTS

British visual artist and lighting designer Tupac Martir talks about his work with ARRI SkyPanel LED soft lights at fashion events.

Photos: Indigital Images

ARRI's SkyPanel family of LED soft lights is not just being embraced by the film and television industry, it is becoming an increasingly popular lighting range across other application areas, from still photography to events. The well-known British visual artist and lighting designer Tupac Martir used 50 ARRI SkyPanel S60-C fixtures to illuminate the catwalk for Emilio Pucci's show at the 2016 Milan Fashion Week. He spoke with ARRI about how well the SkyPanel fits in to the world of fashion.

Why are you fascinated by light?

I love what light can do, how it enhances an idea or creates a poignant moment – every time the audience takes a picture they are capturing a moment that has been carefully created with light. Most people are not aware of how much light brings to their life, how much it influences how they feel – their mood and behavior. I love the idea that by creating the scene I become part of your life without you even knowing that I exist, or realizing that I thought about how you would feel in that moment.

As a lighting designer, what are the priorities and challenges at fashion events like Emilio Pucci's show?

The first and most important thing is to remember that the collection is king. We all work to make the clothes look as good as possible. With that in mind, the photographers at the venue need to communicate the different looks and ideas that the designer has created. We live in the days of social media and everyone has become a window

Lighting designer Tupac Martir

“The SkyPanels gave me the color range that I needed, plus they looked very sexy on camera.”

into an event. It is important that those pictures are also great to look at, as you never know who is posting and who is watching. So the priority is to provide a clean view of the clothes, the way that the designer intended. Everything else is just enhancement or decoration.

During this show you worked with 50 ARRI SkyPanel S60-C fixtures. Why did you choose them?

When I was looking at how to create an even-looking catwalk, it became evident that it should be done with light. By having a light element, rather than a scenographic element, we could enhance the space in a much more modern way. So I started looking at different lamps and then I remembered using SkyPanels on a previous TV shoot we had done. The SkyPanels gave me the color range that I needed, plus they looked very sexy on camera.

Which features of the SkyPanel do you find most useful?

The fact that they have a full range of colors, that they can be used with RDM and how punchy they are, makes them a great tool for many different occasions. The RDM feature allows me to see each one of them and change the settings, without having to send a technician to check if something is failing, or to find out what is going on.

How else have you used SkyPanels, and what other applications would you consider them for?

We had used them previously for a commercial shoot in the UK and also as the main light inside the 360-degree box we created for the last Hugo Boss women’s show. I think the SkyPanel is great for eye candy. On the Hugo Boss shoot we used it to change the colors of the environment and it allowed us to rapidly alter the 360-degree experience for viewers. I also believe that there is scope to explore using the SkyPanel as an effect light, because of its quick dimming.

Photos: Nicole Rivelli © Amazon Prime Video

ARRI CAMERAS FOR HDR ON AMAZON

Cinematographer Tim Orr captures with ALEXA XT on an Amazon Studios TV pilot requiring UHD and HDR deliverables.

The Amazon series *Z: The Beginning of Everything* centers on the 1920s American socialite Zelda Fitzgerald and her tempestuous marriage to novelist F. Scott Fitzgerald. As this was one of the first shows with UHD/HDR deliverables, the main grade was in Rec 709 with a trim pass for HDR, but Amazon's commitment to High Dynamic Range content is increasing and it has selected ALEXA and AMIRA as its cameras of choice for the best overall UHD/HDR image quality. DP Tim Orr spoke to ARRI about shooting the pilot with ALEXA XT cameras, recording in ProRes 3.2K.

Were you and director Tim Blake Nelson after a particular look for this show?

The inspiration mainly came from still photography of the period, particularly Autochromes, which have a soft, painterly feel. But we didn't want the starkness and desaturation of the Autochrome look to overwhelm the characters and the story, so we also played with Kodachrome. Working with colorist Sean Dunckley I tested LUTs based on both processes, and eventually settled on two LUTs that we used for the show.

Why did you choose ALEXA, and was HDR a concern while you were shooting?

I have used the ALEXA ever since it came out and I'm very comfortable with the camera, knowing what it can deliver. A lot of our interior scenes were definitely low light level and of course sensitivity and dynamic range are great strengths of the ALEXA. I don't tend to alter the EI from 800; I know how far I can push it and still have a very safe digital negative.

I don't think you could choose a better camera than ALEXA for HDR and I didn't find that aspect to be troubling at all. One of the


Cinematographer Tim Orr

only things you have to be a little more aware of – that you don't necessarily see on the set – is what will be visible out of windows. Because with HDR you might end up with more highlight detail than you thought, which could be an issue, especially on a period show when you're sometimes relying on windows being blown out. We didn't have a situation like that on this pilot, but it's something to be aware of.

Going forward, ARRI recommends on-set HDR monitoring – what are your thoughts on that?

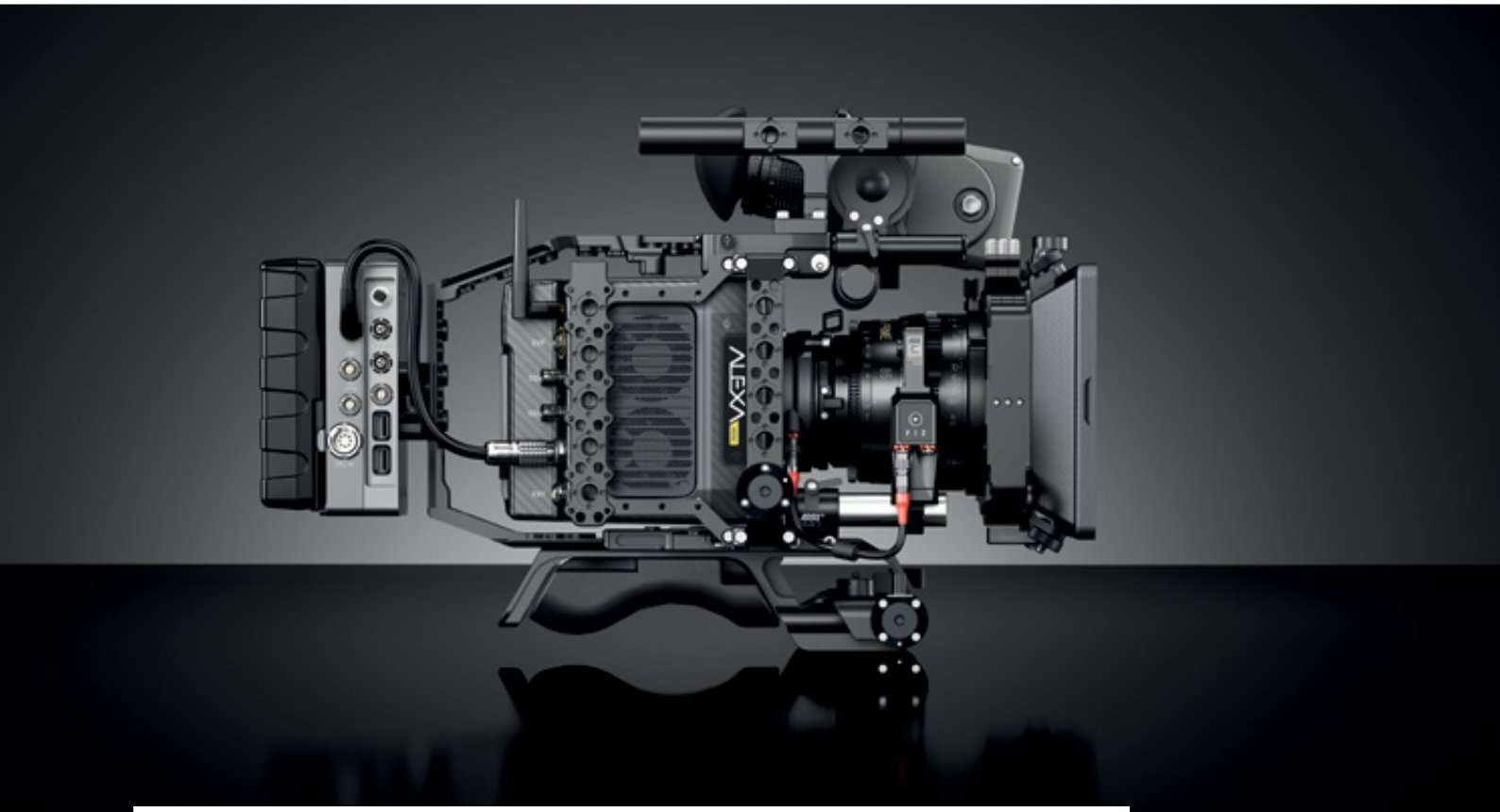
With digital we're used to seeing the image on set and there shouldn't be any surprises, but HDR isn't as easy to monitor as Log C or a LUT. It certainly could be helpful, but I also think that people might get overly caught up in it. If it's the type of thing you can turn on and off, so you could check the HDR for a specific issue or a specific shot, then I could see that being very useful, but it's probably not something I would want to spend too much of my time with.

Did you find yourself checking the histogram more often?

Our DIT was looking things over very carefully in the truck, so I didn't really have to worry about it. There was one scene, a long dinner scene that was supposed to take place at dusk; it was more than four pages long and took at least six hours to shoot, so trying to maintain the windows at the correct level of brightness was a bit difficult. That was the only time I can remember being a little more keenly aware of what the extended dynamic range might do.

You weren't at the HDR grade, is that right?

No, but then the HDR grade was a secondary pass on this show. I was in communication with the colorist to make him aware of what the intent of the photography was, and to address any issues that might arise. The thing to look out for is situations where there might be unintended consequences of the HDR, where it starts to change the visual storytelling. That's where it could become problematic, but it was very smooth on this pilot and there were no issues.



ALEXA MINI ENHANCEMENTS

New studio accessories and improved interaction with the wireless WCU-4 hand unit make the ALEXA Mini even more versatile on set.

The ALEXA Mini has been wholeheartedly embraced by the worldwide industry and is used in many different configurations on all types of production. In response to user feedback, new hardware accessories now improve on-set efficiency, while software developments further refine the camera's functionality. Some key features of ALEXA Mini Software Update Package (SUP) 5.0 are highlighted in this article and others in this issue, but there are more besides, from increased support for EF lenses, ARRI Master Grips and 1.3x anamorphic lenses, to easier timecode synchronization and multiple monitoring and display improvements.

NEW STUDIO ACCESSORY SET

The compact and lightweight ALEXA Mini is a highly versatile tool on set. Some productions use it as a second or third camera, while others use it as the main or only camera throughout a shoot. As a result, it is frequently moved from one configuration to another, and any time savings that can be made during these transitions will have a big impact on the daily shooting schedule.

For this reason, ARRI has developed a new studio set for the ALEXA Mini, comprising four accessories. At the core of the new system is the ARRI Compact Bridge Plate CBP-1, a base plate with integrated sliding bridge plate and shoulder pad. This allows rapid, tool-less transitions between configurations, for example from TRINITY, MAXIMA or Steadicam stabilizers to a tripod head or an operator's shoulder.

The Rear Accessory Bracket RAB-1 offers flexible attachment options for the Power Splitting Box Mk II, a power distribution unit available in Gold Mount and V-Mount versions, while the Side Accessory Bracket SAB-1 provides a simple interface for mounting accessories towards the rear of the camera. Many previously released ARRI camera accessories for the ALEXA Mini are fully compatible with the new studio set.

WCU-4 INTEGRATION

In addition to the ARRI Look Library and EXT Sync functionality (see pages 12 and 25), as well as numerous other refinements, one of the key advances coming with ALEXA Mini SUP 5.0 is enhanced integration with the ARRI WCU-4, a comfortable and ruggedly built 3-axis wireless control unit. Already widely used on ALEXA Mini sets, the WCU-4 will become an even more ideal companion with the new camera control features being introduced as part of SUP 5.0.

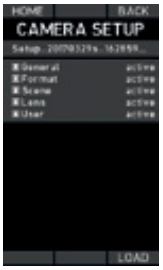
WIRELESS TRANSFER OF LENS FILES

Previously, lens files of lenses mapped for use with the ARRI Lens Data System had to be manually transferred to the ALEXA Mini via a USB stick. Now, users can select a lens file stored on the SD card in their WCU-4 and – using just the hand unit – wirelessly transmit the file to the ALEXA Mini, saving time and effort.

Wireless lens file transfer is also useful in situations when setup times are short and the camera becomes inaccessible straight after a lens change, for example when rigged on a crane or car mount. The AC can mount the lens and then do the rest of the setup, from lens calibration to lens files transfer, remotely.

WIRELESS PLAYBACK CONTROL

Full remote playback control is now possible from the WCU-4. This allows users to wirelessly select, play back, and shuttle through any clip from the CFast 2.0 card in the ALEXA Mini without needing direct access to the camera, which again is useful when it is rigged in a hard-to-reach location. Both this feature and the wireless transfer of lens files will be made available to other ARRI cameras with future software upgrades.



WIRELESS USER SETUPS

SUP 5.0 extends the user setup feature of the ALEXA Mini, which allows all user-defined settings to be stored in a single file. Partial settings are now possible using five parameter groups, enabling more flexible and more specific control, and the camera can now store multiple different setups. Most importantly, these user setups can be wirelessly accessed and activated from the WCU-4, permitting ACs and drone operators to rapidly switch camera settings remotely, for example shifting from ProRes to ARRIRAW recording or activating various looks from ALEXA Mini's internal ARRI Look Library.

1st AC Jake Marcuson
Photo: Jonathan Olley

1ST AC JAKE MARCUSON ON THE WCU-4

"I've had a WCU-4 for a few years now and essentially I think it's a brilliant system. I like the way you can suggest improvements to ARRI and they make an effort to incorporate that feedback into software updates. Most of the time we're on ARRI cameras and it really works well as a system, letting you switch between cameras by changing the channel. Improving the integration with the ALEXA Mini is an example of how the system is evolving, and can only help us on set."

Credits include *Rogue One: A Star Wars Story* and *Suffragette*

VIRTUAL REALITY

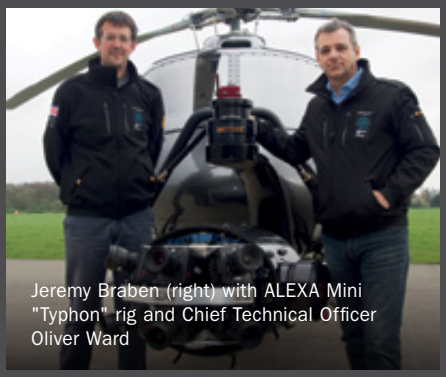
At the Berlinale, a 360-degree virtual reality rig using multiple ALEXA Mini cameras highlighted ARRI's research into VR applications.

EXT SYNC FOR MULTI-CAMERA ALEXA MINI SHOOTS

One of the new features of ALEXA Mini SUP 5.0 is an EXT Sync function that allows the sensors and operational parameters of up to 15 ALEXA Mini cameras to be synchronized to a master ALEXA Mini. Slaves can assume parameters like the frame rate, shutter angle, or ND setup of the master camera, which also provides a status summary of all cameras. Facilitated by new cables and EDB-2 distribution boxes, EXT Sync simplifies the configuration and control of multi-camera 3D, VR, and VFX applications in a way that permits the entire multi-camera setup to be operated as if it was one single camera.

"We've been working with our new 'Typhon' multi-camera array with ALEXA Minis installed in the SHOTOVER K1 stabilized system for aerial photography action and VFX plate shots on major motion pictures. We have been testing the EDB-2 box, which along with the new EXT Sync feature is going to make it much quicker and simpler to synchronize and operate multiple cameras in future."

Jeremy Braben
Aerial DP and CEO of
Helicopter Film Services



Jeremy Braben (right) with ALEXA Mini "Typhon" rig and Chief Technical Officer Oliver Ward

For the Audi Lounge at the 67th Berlin International Film Festival, ARRI joined forces with the Fraunhofer Heinrich-Hertz-Institut (HHI) to create a unique 360-degree experience. Visitors had the chance to feel like a star at their own film premiere by driving an Audi Q7 past crowds of fans on the red carpet – all in virtual reality, of course.

ARRI's Media division produced a 360-degree film for this extraordinary project, and then integrated it into a virtual reality application. The limited time available was a special challenge, with only 18 hours for the entire process, from the red-carpet shoot to the finished product.

The film was shot with an OmniCam-360, which was developed by Fraunhofer HHI and then optimized for the Berlinale together with ARRI's R&D department. The system comprises six ALEXA Mini cameras arranged in a mirror rig to provide a 360-degree panorama in never-before-seen quality. Other system components include a workstation that generates a live stream of the panorama in HD and UHD, and software plugins for After Effects®, with the aid of which the panorama is subsequently rendered in movie quality.

Based on the proven ARRIRAW recording format, this high-quality panorama is characterized by a native resolution up to 14K x 3K, High Dynamic Range (HDR)

imaging, and full synchronicity of all the cameras.

Over recent years ARRI has been continuously involved in cooperative research into future technology trends relating to advanced and immersive imaging. Projects have encompassed omnidirectional cameras, foundations of light field imaging, and capturing additional information beyond the RGB picture, especially depth information. In each case ARRI has built camera prototypes to test the state of the technology with respect to production readiness.

"All of these activities have in common the massive use of signal processing and image manipulation, culminating in computational imaging," says ARRI Principal Engineer Dr. Johannes Steurer. "The fast-growing hot topics of virtual reality and augmented reality also require huge computational efforts for producing the intended visual experience. They are being observed as new business opportunities for various branches within ARRI, ranging from camera products to production services."

Multi-camera ARRI rigs developed collaboratively with Fraunhofer HHI have been tested on various pilot productions in order to mature the system for professional environments and demonstrate its superior quality. This process will continue further until solutions for VR and AR applications provide the same image quality, robustness, and ease of operation for which ARRI products are known in existing markets.

"ARRI Media has already started commercial business for VR production and postproduction services, currently focusing on automotive and other customers seeking novel user experiences for the innovative presentation of their products," continues Steurer. "We are learning fast what technological requirements are related to computational imaging and how to gear up for application benefits."

HIGH-SPEED LIGHTING

Gaffer Andy Stein works with M-Series daylight lampheads and ARRI high-speed ballasts on a slow-motion ice hockey shoot.

Based out of Cologne, Andy Stein is a highly experienced commercials gaffer whose rental company, Amp-light Film & TV Service, boasts an inventory that includes ARRI SkyPanel, L-Series, tungsten, and M-Series fixtures. For a recent corporate promo film that involved shooting at frame rates up to 1,500 fps, Stein selected M18, M40, and M90 M-Series lampheads, combining them with ARRI ballasts.

Can you describe the concept for this shoot?

It was a short movie for a company that makes ice hockey pucks and the plastic body protection worn by players. The concept was to use high-speed filming to show in slow motion the sheer power and physicality of the impacts in this sport – a puck crashing into the transparent wall that protects spectators, or two players smashing into each other, or a player striking the puck.

What lighting challenges did you face?

We were shooting in a real ice rink so we needed a lot of lighting power, because you can see so much when you're in there. Our main considerations were power and output, but we also had to find a lighting solution that would work with the hockey players in the rink, as they needed space to skate around. The other factor was time: we were on a tight schedule so we only wanted a few fixtures on the ice, with as much flexibility as possible.

Which fixtures did you choose and why were they the right solution?

I used one M90 for a backlight and another to light from the front. Then I used an M40 as a hard kicker from the side and an M18 for details with the goalkeeper and the puck. These M-Series lampheads allowed me to react quickly if we needed more or less light, but also if we needed it to be harder or softer. The output range is extremely wide, so I was always able to

Gaffer Andy Stein

give the director more when he wanted to increase the frame rate. Also we could change the bulbs to vary the output, for example the M90 can be 6 kW or 9 kW.

Did the ARRI ballasts work well for you?

Yes, they did. We were using the older high-speed series, but also the new ARRI AutoScan ballasts. The great advantage is that you can really focus on getting the lighting right, and let the ballasts determine the correct frequency for you.

What are your general thoughts on the ARRI M-Series?

At my rental house we have the M8, M18, M40, M90, and ARRIMAX, and we use all of them. The M-Series is the best choice for high-speed shoots, but the flexibility of these lamps allows me to use them for all kinds of different situations on different sets. You can use them close or far away, hard or soft, and the light quality is always great.

The M18 is a real all-purpose weapon and I have it on every shoot; it's compact and you can use it with domestic power instead of a generator, but it has enough output for a Chimera. The M40 can be used with a 2.5 kW bulb if you have limited power on set, while the M90 is great when you're outside, fighting with the sun, or when you need to punch daylight into an interior. On this shoot the M-Series gave us exactly what we needed, with great pictures, no flicker problems, and really versatile light output.

NEW ARRI HIGH-SPEED BALLAST EB MAX 1.8

Continuing its line of high-speed ballasts equipped with an AutoScan feature that ensures optimum light quality with minimal effort, ARRI announces the new EB MAX 1.8. Despite its compact housing, the EB MAX 1.8 covers four different power classes: 575 W, 800 W, 1,200 W, and 1,800 W. In addition to established features such as Active Line Filter (ALF) and Compensation for Cable Losses (CCL), it offers extended DMX remote control of operation mode and frequency, as well as on/off and dimming. When combined with ARRI daylight lampheads, the EB MAX 1.8 enables optimal performance and advanced controls for high image quality – at any frame rate.

ALEXA 65

GHOST IN THE SHELL

Jess Hall BSC turns to the ALEXA 65 system from ARRI Rental for director Rupert Sanders' take on the classic Japanese manga and anime series.

Ghost in the Shell **stars Scarlett Johansson as Major, a cyber-enhanced counter-terrorism soldier who comes to question her identity and background. Seeking to develop a timeless, high-quality aesthetic for the film, cinematographer Jess Hall BSC chose the ALEXA 65 large format camera system, which is available exclusively from ARRI Rental. He speaks here about his work on the movie.**

What drew you to the ALEXA 65?

I think the ALEXA 65 interested me for several reasons. Firstly, I wanted to do something that had a different kind of visual quality to it, and didn't resemble everything else I was looking at. I was also very aware of all the different release platforms we would be working with: IMAX, HDR, and standard projection. It was really about capturing in a future-proof way because I want this film to remain relevant and not look dated in a few years' time, so I needed to start with the most advanced technology available.

Before this film I had used the ALEXA 65 for a Halo commercial, although it was very early days for the camera so we shot side-by-side with a 35-format ALEXA. That process really highlighted the inherent qualities of the larger format, one of which is that it flattens perspective. For *Ghost in the Shell* this was interesting because I was thinking about how to translate anime and manga into live action, and a lot of the original artwork from the anime uses wide-angle frames, but drawn without much distortion, which suited the large image area and flattened perspective of the ALEXA 65.

How does cinematic depth of field and shallow focus translate to the world of anime?

The anime film of *Ghost in the Shell* is a combination of traditional cell animation and CGI, but to me every frame was like a watercolor. The softness of it was very beautiful to look at, so I wanted to see if I could get that kind of soft, painterly

Cinematographer Jess Hall BSC at the ALEXA 65
Photo: Jasin Boland

Photos © 2017 Paramount Pictures

quality. Certainly the idea of shooting a straightforward digital image was not particularly interesting to me, and definitely not the aesthetic I was searching for. Having shallow focus to play with was an asset in this case; the custom lenses that Panavision put together for us were another important element to capturing that unique quality.

What was your approach to color on the film?

Color was very important and I worked on it in quite a detailed way, looking at the genre of anime in general and also specifically at *Ghost in the Shell*. The color palette is unique and complex, featuring many secondary colors with extremely subtle hues. It's not really something I've seen before in motion pictures. I thought it would be interesting to somehow capture those qualities – things like the subtle tones of gray that infuse the skin tones. In testing I found that many of the colors easily generated by motion picture LED lighting veered too much towards the primary spectrum, lacking the subtlety I was looking for. I studied the anime and made extensive photographic studies of Hong Kong at night. Then I refined and analyzed the color palette, incorporating some practices that inform traditional Japanese art. Finally I distilled this into 28 colors that I wanted to see in the film and we set about programming them into a wide platform of LED lights, which was an interesting and extensive process.

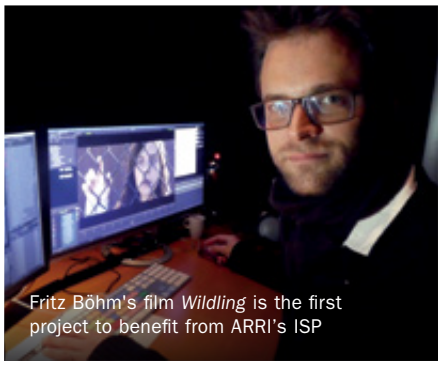
Is it vital to know that your camera will capture these very precise colors in a natural and pleasing way?

Yes it is. I've always really liked the color space of the ALEXA; it's very appealing to me and it seemed like the right kind of color space for this film. However, I found that the ALEXA 65 has developed a stage further, especially in terms of how it renders low light and blacks. The sophistication with which it was able to register things in that kind of borderland of the spectrum, the bottom of the curve, was really important. I did design a custom LUT, because with all the complex LED colors I needed something consistent and refined – it was almost like working with one film stock. All the colors I used in the film were designed specifically to be captured by this camera. That was part of the testing and design process. The other thing I did was work entirely in P3 color space; I didn't use Rec 709 at all. Even the monitoring on set was done in P3 for the extended color gamut, because some of the colors just wouldn't read that well on Rec 709.

Berlinale Talents: ARRI's Mandy Rahn at Talents Circles, introducing the International Support Program

ARRI'S INTERNATIONAL SUPPORT PROGRAM FOSTERS TALENT

With the International Support Program, ARRI helps emerging filmmakers from all over the world to realize their unique projects.



Fritz Böhm's film *Wildling* is the first project to benefit from ARRI's ISP

ARRI has a long tradition of promoting young talent, underscoring the company's ongoing commitment to the motion picture and media industry. In recent years, several training centers and film schools, as well as film festivals and awards worldwide, have received financial support. The ARRI Sundance Feature Film Program has been behind notable successes such as *Beasts of the Southern Wild* and *Fruitvale Station*, while the ARRI Film Independent Feature Film Grant, ARRI AMIRA Filmmaker Grant, and similar initiatives have provided many other young filmmakers with direct backing for their projects, often giving their careers a significant boost.

Last year ARRI started a new promotion platform for talents worldwide: the

International Support Program. “It is aimed at emerging filmmakers who are working on unique projects with an international edge,” explains Mandy Rahn, Senior Manager of International Programs at ARRI. Through this program ARRI offers multifaceted support, ranging from development and access to state-of-the-art ARRI equipment, to postproduction, co-production, and world sales.

ARRI’s International Support Program was unveiled to the public at the recent Toronto and Sundance film festivals, and in February 2017 it was presented at the Berlin International Film Festival, also known as the Berlinale. As a co-partner ARRI also helped shape the Berlinale Talents initiative, which welcomed around 250 up-and-comers from the film and TV industries of 71 different countries.

During the festival ARRI experts attended various events, including the Dine & Shine networking dinner, the Talents Circles – where the International Support Program and ARRI Academy were introduced – and the Camera Studio workshop. Furthermore, ARRI co-hosted a high-profile panel discussion titled “On Location: *Berlin Station*” – a multidisciplinary tour through the production process and digital workflow of this TV crime series, attended by numerous industry talents.

The first project to benefit from the International Support Program – in the form of a co-production and postproduction services package – is the coming-of-age/horror feature *Wildling*. Fritz Böhm’s directorial debut was shot in New York last year by cinematographer Toby Oliver ACS on two ARRI cameras: ALEXA Mini and AMIRA. *Wildling* stars Bel Powley and Liv Tyler, and is being produced by Maven Pictures, Celine Rattray, Trudie Styler, and Charlotte Ubben. The film is currently in postproduction.

Learn more about the ISP and how to apply:
www.arri.com/isp

PROFESSIONAL TRAINING WITH ARRI ACADEMY

Other options for budding talent can be explored through ARRI Academy, which offers a 50% discount to students. In various countries and languages worldwide, ARRI Academy runs training courses led by industry professionals who cover everything from on-set techniques to postproduction workflows. In these certified sessions attendees gain practical, hands-on experience with ARRI’s diverse range of cameras, lenses, lights, and accessories. ARRI Academy also holds regular service training courses, imparting detailed knowledge about the maintenance of ARRI equipment. On occasion, ARRI Academy Master Classes are hosted; at these very special workshops the motion picture industry’s top creative professionals share their knowledge and experience, focusing on real-world skills. Often the presenter demonstrates his or her approach through well-known scenes from their own work.

Check the schedule for upcoming courses:
www.arri.com/academy

TRINITY: FEEDBACK FROM THE FIELD

Camera operator Daniel Schade shares his thoughts on working with the ARRI TRINITY camera stabilizer.

Camera operator Daniel Schade with TRINITY

Options for the ARRI Camera Stabilizer System are expanding with new accessories such as ALEXA, AMIRA, and ALEXA Mini adapter mounts for the TRINITY and MAXIMA stabilizers. With the SAM-2 plate, ALEXA Mini can now move quickly between its new studio accessory set and TRINITY. Los Angeles-based camera operator Daniel Schade, who has a background of working with camera stabilizers on features, short films, broadcast productions, commercials, and music videos, spoke to ARRI about his experience with TRINITY.

What are your thoughts on TRINITY, having worked with it?

TRINITY is the next evolution in camera movement. Imagine combining the unique angles of a jib with the freedom of a Steadicam – the creative possibilities become endless. Whether the DP wants to keep it simple for an easy walk-and-talk or asks for a more complicated running shot, I can trust the TRINITY to maintain a rock-solid and stable frame.

I think that TRINITY is a perfect puzzle piece that fits neatly into current production workflows. It not only opens up new creative horizons, but also might actually save a production time and money.

What new possibilities does TRINITY open up?

For the first time on set, TRINITY offers the ability to move a fully stabilized camera system (carrying a 50 lbs. camera setup) from a person's feet up to above head height in one continuous move, while maintaining 360-degree freedom of movement and only taking up as much real estate as a regular Steadicam. This is due to the unique 2-axis design of the TRINITY. Adjusting the height by rotating the camera forward rather than to the side allows the operator to be agile and compact in tight shooting locations – for example when following an actor up a set of stairs in low mode.

> "TRINITY feels like a familiar piece of gear from the first time you use it."

In addition, being able to adjust the tilt independently via the joystick on the handle permits the operator to easily achieve hard-to-reach high angles, like over the shoulder, or extremely low angles, looking up.

Why would you use TRINITY over other stabilization systems?

The unique functionality of TRINITY makes it an asset to any set, and since the system is marketed by ARRI, I have total trust in its reliability. Being able to quickly mount pretty much any camera from a tripod to the stabilized head takes the same amount of time as moving to a traditional Steadicam setup, but offers greater creativity and control. Lens and filter changes can also be done more quickly compared to other gimbals, because of the TRINITY's powerful motors and software. Calibration only takes a second, you can easily switch between five user-customizable presets, cabling is reduced, and it consumes only 14 watts of power.

Basically the TRINITY feels like a familiar piece of gear from the first time you use it and I can't believe this ingenious design hasn't existed until now. It's like your iPhone – it just works. At last we can use true production cameras on a stabilized rig and work at the speeds that assistant directors and producers expect.

Will you use TRINITY again?

I was impressed enough to order a TRINITY and am excited to explore all of the as-yet unimagined possibilities a director might pursue to fulfill their creative vision. The TRINITY is a product with untapped potential and I am sure that ARRI will make it future-proof by improving the system from year to year. One day, I can see TRINITY being the ultimate production tool, whereby the camera and the TRINITY head advance as one unit from dolly, to stabilizer, to jib, to CableCam, covering all production needs.

ARRI LED LIGHTS: LONG-TERM BENEFITS

Swiss public broadcaster RTS looks back on the successful installation of ARRI L-Series LED Fresnels in its multi-purpose, fully automated TV studio.

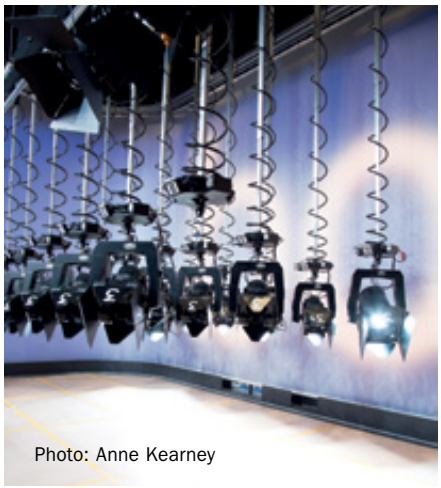


Photo: Anne Kearney

RTS (Radio Télévision Suisse), part of the SRG SSR Group, is responsible for the production and broadcasting of radio and television programming in French-speaking Switzerland. On June 30, 2015, RTS opened its first fully automated studio, equipped with state-of-the-art ARRI LED lighting fixtures.

Planning for the modernization of the 340 sqm RTS studio began approximately three years ago. The intention was to use the studio for magazine and entertainment productions in the future. A project team from Despar Systeme AG was given the brief to take advantage of the latest technologies in order to allow the space to be shared by several different productions, while minimizing setup times.

All 1,984 of the studio's 2 kW and 5 kW tungsten lampheads would be replaced – ideally with LED fixtures, although the same light output had to be maintained. Products from several lighting manufacturers were tested, with the ARRI demo equipment supplied by Swiss dealer ECM.

Emmanuel Derval, Head of the Studios & OB Vans Production Unit at RTS, comments: "A lot of different fixtures were tested, but because of the very high color index and light output of ARRI LEDs, the decision to go with ARRI was made very quickly. All the colors of the skin tones, backgrounds, and set decorations looked absolutely natural."

Initially it appeared as though ARRI L7 LED Fresnels would have to be combined with 2 kW ARRI tungsten fixtures, because at that time the ARRI L10 was not yet ready for shipping. Fortunately, however, ARRI was able to deliver L10 lampheads in time to meet the schedule, so the final order was for eight L10-Cs to replace the 5 kW tungstens and 62 L7-Cs to replace the 2 kW tungstens. 50 of the L7-Cs and all of the L10-Cs were delivered with motorized yokes and barndoors from Licht-Technik, and telescopes from MTS.

"All the colors of the skin tones, backgrounds, and set decorations looked absolutely natural."

After more than a year of working in the re-equipped studio, Derval is full of praise for the efficiency of the ARRI LEDs: "This studio is used for several shows, so after one finishes, our crew has to set up the next one. In the past, with the old equipment, the staff needed four to six hours to set up a show. Now they need one hour at most to set up a new show or a magazine. It means that we are able to produce, in one day, up to three or four shows, instead of one show in two days."

Time and cost savings are at the heart of this success story: "Thanks to our control system, it is possible to store, recall, or duplicate the lighting setups," says Derval. "There are no more gels to cut, no more adjustment of each and every lamphead, and no more ladders. The workflow is simpler, which allows more time for creativity. Additionally, the heat output has reduced dramatically with the LED lampheads, so our air-conditioning equipment is much smaller than it was before, leading to space and electricity cost savings."

In terms of the quality of the light and of the lampheads themselves, Derval has been pleasantly surprised. "The light output is extremely stable and the fixtures are very robust," he says. "At the beginning, as LED was a very new technology, we were supposing that the fixtures would not fully satisfy our requirements, but after using them for well over a year we haven't had any problems at all."

Following this trend-setting installation, two other RTS studios have been refurbished with ARRI LED lampheads, and the sports studio is now also equipped with ARRI LEDs.

AWARDS, MASTER CLASSES AND DISCUSSIONS

Over the last few months ARRI has hosted and attended numerous events worldwide with leading industry creatives. Here are just a few impressions.

THE ACADEMY OF MOTION PICTURE ARTS AND SCIENCES (AMPAS) honored ARRI with a Scientific and Engineering Award for its Super 35 format ALEXA digital camera system. Members of the project team traveled to Los Angeles to collect ARRI's 19th Scientific and Technical Award, including (from left) Marc Shipman-Mueller, Stephan Schenk, Franz Kraus, Walter Trauninger, and Achim Oehler.

AT THE BERLIN INTERNATIONAL FILM FESTIVAL Dr. Jörg Pohlman of ARRI (left) welcomed cinematographers Winnie van den Heun (center) and Kees Van Oostrum ASC to the ARRI Opening Night event.

CINEMATOGRAPHER ANTHONY DOD MANTLE ASC, BSC, DFF (right) spoke with Henning Rädlein at ARRI's New Year Symposium in Munich about his experiences with ARRI equipment on *Snowden* and *T2 Trainspotting*.

OSCAR-WINNING DIRECTOR ANG LEE (2nd from left) was at the IBC show in Amsterdam and stopped by the ARRI booth. Franz Kraus (left), Dr. Jörg Pohlman (3rd from right) and Curt O. Schaller presented the company's latest offerings to him, including the ARRI TRINITY camera stabilizer.

A WELCOME CEREMONY FOR THE FIRST ALEXA SXT CAMERA delivered to Sri Lanka was attended by motion picture industry professionals, as well as members of parliament and the ministers of finance, tourism, and health.

CINEMATOGRAPHER FLORIAN BALLHAUS ASC also visited the ARRI booth at IBC and tried out the new Master Grips.

DURING ARRI'S LIVE PANEL DISCUSSION AT THE BERLINALE, cinematographer Hagen Bogdanski talked with Elfi Kerscher about his work on the TV crime drama series *Berlin Station*.

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DIOPTER ACCESSORIES

ARRI is introducing a new frame and a new stage for mounting 138 mm close-up diopters, as well as an adapter that also permits 4.5” diopters to be used with either.

DIOPTER FRAME 138 MM

The diopter frame allows 138 mm diopters of up to +2 to be used in a lightweight matte box such as the ARRI LMB-25. The frame has the width of two 4” x 5.65” filter frames and fits into a 2- or 3-filter stage. A safety mechanism prevents the diopter from falling out of the frame during exchange, while two ¼” threads permit the frame to be attached to an articulating arm.

DIOPTER STAGE 138 MM

The diopter stage can be used at the back of a 4” x 5.65” clip-on matte box, or independently with a rear-mounted clamp adapter. Diopters up to +3 can be fitted, and the position of split diopters can be adjusted with an integrated friction wheel. As with the diopter frame, a safety device and ¼” mounting threads are included.

PRO CAMERA ACCESSORIES

New diopter options and versatile on-set crew supplies added to ARRI's PCA range.

CREW SUPPLIES

This special collection of ARRI-branded unit bags, pouches, belts and gloves is the best way to look after yourself and your equipment during a shoot. Order lists can be compiled on the ARRI website, allowing you to configure the supplies that will meet your specific on-set storage and protection needs.

BAGS

(See main picture) ARRI unit bags offer a rugged solution for organizing and transporting camera gear and accessories. The exterior is constructed from a highly durable, waterproof material, while the interior is fully padded to provide ample protection from the rigors of life on set.

POUCHES

Available in various sizes and types, ARRI pouches feature multiple pockets and slots for organizing filters, mini monitors, tape measures, Sharpies, and other everyday basics. Constructed from water-resistant nylon fabric, they offer hardy protection and easy access to on-set tools and accessories.

BELTS

Specially designed ARRI belts provide comfortable, sturdy support for any of the ARRI range of pouches fitted with a belt loop. Available in three sizes, the fully padded belt has a heavy-duty quick release and provides fabric snaps and D-rings for attaching additional accessories.

GLOVES

Rugged but agile, ARRI gloves feature dual-layered goat leather in high-wear areas, a padded palm for extra comfort, and neoprene panels on the knuckles for maximum dexterity. The adjustable wrist closure ensures a snug fit, while touchscreen tips on the thumb and finger allow the use of mobile devices.

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