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# CINEMA TECHNOLOGY

Vol 21 • No 4 • December 2008



B.K.S.T.S. The Moving Image Society

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PICTUREVILLE BRADFORD REFIT - The whole story

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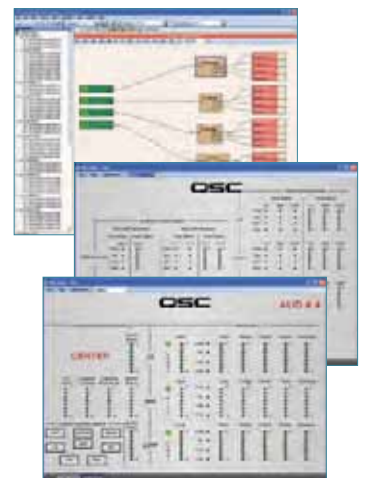
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### On the cover:

Demonstrated at IBC 2008, a Kinton FP30 projector equipped with the FTU film transfer unit. A CCD camera replaces the projection lens head, allowing video pictures to be taken from the film. The studio projector can easily be converted from normal projection to transfer operation and vice versa.

*See article on page 14*

## CINEMA TECHNOLOGY

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### BKSTS - THE MOVING IMAGE SOCIETY

The BKSTS (British Kinematograph Sound and Television Society) exists to encourage, sustain, educate, train and provide a focus for all those who are creatively or technologically involved in the business of providing moving images and associated sound in any form and through any media.

The society works to maintain standards and to encourage the pursuit of excellence in all aspects of moving image and associated sound technology, in the UK and throughout the world.

The Society is independent of all governments and commercial organisations.

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*The Society gratefully acknowledges the support of the above Companies and Organisations.*

Enquiries regarding Sponsor Membership of the BKSTS should be addressed to:

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## A MESSAGE FROM THE PRESIDENT



Dear All,

It is Autumn / Fall and as I look out of my window the leaves are beginning to drop, creating a glorious gold carpet over the lawn. The world as we have known it seems to be falling too and it is not such a pretty sight...but we need to remember the words of Albert Einstein - 'in the middle of difficulties lies opportunity.'

I would like to remind you all that our Society is unique today as it is 'run for the members by the members' and to that end I encourage everyone to contribute to ensure the wellbeing of our beloved organisation...can you help to move our Society forward?

We have been through tough days as a Society and we are not out of the wood as yet. We have a lot to do to ensure that the Society is relevant for today. If we are to survive, adaptation is necessary. I believe that our Society has great opportunities ahead in the areas of accreditation, training, educational events and knowledge exchange. The Society will be continuing to accredit courses relevant to the craft skills within the content creation and exhibition industry. Training is vital as we move into new technologies and the Training Committee has embarked on a season of lectures relating to new and exciting technologies. These lectures are held on the 1<sup>st</sup> Monday of each month at the BFI Southbank. I encourage you and especially our younger members to attend the lectures as they will give you insight to and an overview of current technology and working practices. These sessions are also a great place for networking, so vital for the advancement of best working practice in our industry. If you are not able to attend it will be possible to obtain an edited version as a podcast which will be available on our website.

The website is moving forward and Council and I want it to become the heart of our Society, a place to exchange and gain knowledge. To that end we all need to use it more. I know that some members do not have access to the internet - therefore drop us a note so that we can keep you updated by post - but we do need to embrace the advantages and immediacy of the internet.

If you have access to a computer I need you to check that your details are correct on our Database by going to [www.bksts.com](http://www.bksts.com) and logging on to your personal account using your membership number. It is essential that you keep your records up to date, especially if you move or change jobs, otherwise we will not be able to keep in touch.

Phil has sent me a reminder that it is nearly time to send out invoices for 2009 membership - that means Christmas must be on the way! The invoices will be sent out over Christmas / New Year for the 2009 subscription. *As subscriptions are the life blood of our Society, I ask if you can allow for your subscription when you do your Christmas budget. It does help if you can pay promptly as it keeps costs down and means we can use the money to provide improved services.*

In closing, the Awards Ceremony has slipped into early 2009 due to the current World economic decline. We will be making the final arrangements for this important event by the end of November. Again if you have any nominations for worthy people within our industry to receive awards do let us know as soon as possible.

The Bernard Happé Lecture is to take place on 1st December at BFI Studio, Southbank and the Guest presenter is Hazel Wright from the Royal Opera House and her subject will be 'Opera and Ballet on the Big Screen'. Watch the website for more information.

I look forward to meeting you at one of our events. Thank you for your continued support in these challenging times and with your help we will survive.

Best wishes

Roland Brown

President BKSTS

# BKSTS Society News

## BKSTS well represented at IBC



**BKSTS was once again well represented at IBC 2008 in Amsterdam, with many of its members playing their different parts.**

BKSTS Fellow Phil Rutter did most of the practical hard work and organisation needed to ensure that the stand actually materialised and that there were plenty of copies of Cinema Technology for visitors to take, with wallcharts and merchandise on sale.

BKSTS President Roland Brown put together and presented a stimulating 'What caught my eye' session on 'workflow revolutions', using his industry experience to highlight the vitally important transition areas, and his extensive contacts book to drag in lots of top industry people to make short and pithy comments on how they saw the problems and the possible solutions.

BKSTS Fellow Michael Grade provided a pre-recorded interview on the future of broadcasting, which stimulated some controversial discussions over the following days. BKSTS Member Roderick Snell gave the Keynote Address at a Masterclass considering the transition from where the industry is today to the new worlds opened up by the developing technologies, considering both technical and investment issues. BKSTS Honorary Fellow Mark Krivochev from the Russian Radio Research Institute gave a poster session on Integrated Television Broadcast and Information systems and Honorary Fellow Gavin Schutz chaired a session on Creativity in the Digital Age. Member Jonathan Smiles of Digital Safari participated in the Tapeless Infrastructures session and Member Patrick von Sychowski, now with Adlabs Digital Cinema, India, took part in the interesting Hollywood meets Bollywood session. BKSTS Fellow Dave Bancroft chaired the Digital Cinema post-production workshop session, and Fellow David Monk put in a vast amount of work to ensure the practical success of much of the now traditional D-Cinema 'theme day'.

Behind the scenes at IBC also always relies on many BKSTS Members, with Members John Holton and Peter Owen being Exhibition Chairman and IBC Council Chairman respectively, and Member Sue Robinson from Shooting Partners was, as ever, the constantly on-the-go producer of the daily IBC Television News.

## BRITISH CINEMA AUDIENCES HIGHEST FOR 40 YEARS

Month (2008)	Cinema admissions
January	13,462,193
February	12,865,746
March	12,178,880
April	9,820,271
May	12,700,821
June	11,820,188
July	21,421,122
August	20,600,900

Source: Cinema Advertising Association / Nielsen EDI

IN WHAT PHIL CLAPP, Chief Executive of the Cinema Exhibitors Association described as 'an absolute phenomenon', the three months June to August 2008 saw UK cinema admissions reach

over 50 million, making it the best summer for cinemas since as far back as 1972.

Figures of 11.82 million for June, a fantastic 21.4 million for July, and 20.4 million for August show

that in spite of the gloomy overall economic conditions in the UK, the cinema business remains popular, with people going to the cinema as an affordable outing. Although cynics may put much of this down to the lousy weather this year, making the cinema an enjoyable escape from wet and windy holiday beaches, much of the credit has to go to the excellent range of movies on show, including *The Dark Knight*, which brought in £47 million in the UK and, in particular, the phenomenally successful *Mamma Mia*, which has brought in over £61 million pounds at UK cinema box offices and over £245 million worldwide.

## JOHN ILES RECEIVES 'HIGHEST HONOUR' UK SCREEN ASSOCIATION FELLOWSHIP AWARD



UK SCREEN ASSOCIATION recently announced the winners of its annual audio awards, The Conch, at a ceremony at The Mayfair Hotel in London. There were more nominations and votes than in previous years and of particular interest to Cinema Technology readers was the fact that John Iles, recently retired from Dolby, and a good friend to the BKSTS over the years, was presented with The UK Screen Fellowship Award - sponsored by Dolby.

This premier award was devised to recognise those who have made an outstanding contribution to the UK sound industry and the winner was chosen by the association's audio committee.

Gaynor Davenport, CEO UK Screen, explained: "The highest honour the UK Screen audio committee can bestow is The Fellowship Award. It recognises outstanding achievement in, and contribution to, the audio industry. John's experience spans over four decades of continuous outstanding contributions to the audio industry, we are delighted he has been chosen for this coveted award."

John began working in the audio industry in 1964, joining a small studio in Mayfair as a technical engineer where he built one of the earliest portable transistorised consoles. He soon became involved in mixing, as well as the technical aspects and went on to record most of the leading international artists of the era, including: Cream, The Who, Sonny & Cher and Barbara Streisand. John joined Dolby Laboratories in

1976 and was soon involved with the Dolby film programme where he helped usher in the early use of Dolby stereo sound in films produced in England, and later in most European formats. Among John's many accomplishments at Dolby was his personal involvement in most of the major films produced in Dolby formats in the 70s and 80s in Europe.

In 1992, John was awarded the Charles Parkhouse Award for services to the British film industry and was made a Fellow of the British Kinematograph Sound and Television Society.

After working with Michael Mann as a Mixer at Delta Sound Shepperton on secondment from Dolby, John was offered the job of Head of Sound. After two years of what he describes as: "the best and worse of times" he rejoined Dolby and continued to build a team of sound consultants and Dolby Approved Studios worldwide. He eventually became Vice President, Cinema, for Dolby Laboratories and retired earlier this year.

## BKSTS MEMBERS NEWS

### Murray Forrest



#### BKSTS FELLOW MURRAY

**FORREST** has retired after 43 years with the Australian film industry. He started out in the business at Col-ormfilm, and after joining Atlab, eventually becoming its Managing Director, helped to transform the company and expand it from a small black and white laboratory operation that serviced newsreels and TV and Film Australia documentaries, into the broad-based creative services and distribution business that Atlab is today. Murray has given devoted service to the industry during his long career, and has a distinguished history in the business. He was the founding chair of Ausfilm, a director of the Screen Producers Association of Australia (SPAA), a past president of the Australian Cinema Pioneers, a past Board Member of the Federation of Producers of Asia, and a former Chair of the SMPTE, who awarded him a Fellowship. Murray intends to continue to contribute to the industry by continuing as Chairman of the Motion Picture Industry Benevolent Society. In 2001 Murray Forrest received AFI's Ken G Hall Award, for his contribution to the preservation of Australia's film heritage, and was also honoured as Australian Cinema Pioneer of the Year. In 2004, the Motion Picture Exhibitors Association honoured him with a Lifetime Achievement Award. We wish Murray a long and enjoyable retirement.

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## PEOPLE IN PROJECTION

### NETHERLANDS Frank De Neeve and Roloff de Jeu



It was good to meet and talk with two projectionists from the Netherlands at the recent IBC Digital Cinema events. Frank de Neeve (left) is already known to many Cinema Technology readers from his interesting articles on a wide variety of cinema-related subjects, from tracking film cans to the future of digital distribution, and from his review of the Cineccita Nuremberg and his report on the Cinemeccanica factory. He is one of those guys who is always busy, managing to combine his journalism (he writes regularly for Holland Film Nieuws magazine) with a full time projectionist's job at the Mustsee Delft cinema.

Roloff de Jeu (right) has since 1997 been a volunteer projectionist at the 52 seat art-house cinema Filmhuis Griffioen in Amstelveen. Running since 1975 it is part of a cultural centre of the Vrije Universiteit of Amsterdam, situated in the student housing campus. He is now also the coordinator and programmer of this cinema, as well as being as a freelance journalist and trainer in editing and post-production software. Roloff is one of the breed of cinema enthusiasts (would it be too unfair to use the word 'eccentric'?) who loves all aspects of film, and whose hobbies include collecting all sorts of cinema-related things. He has fully embraced the new technologies and under the self-assigned nom-de-plume of 'cinemamaniac' has a company called Pulp-o-rama (you can contact him on [info@pulp-o-rama.nl](mailto:info@pulp-o-rama.nl)). For a taste of his wide ranging enthusiasms and to see his postcard collections and photographs that he has taken of cinemas around the world, do take a look at [www.flickr.com/photos/pulp-o-rama/collections/](http://www.flickr.com/photos/pulp-o-rama/collections/)

## NEW DOREMI DIGITAL CINEMA SERVER



DOREMI CINEMA has launched its latest Digital Cinema Server, the DCP-2K4.

Building on Doremi's DCP-2000 platform, which was the first JPEG2000 payback server on the market, the DCP-2K4 provides the same robust feature sets and performance of the DCP-2000 with added ingest inputs, which gives exhibitors flexibility on the receipt and ingest of content for digital playback.

In addition to ingest via USB and Ethernet, the DCP-2K4 contains a DVD player for small package ingest and a pluggable CPU

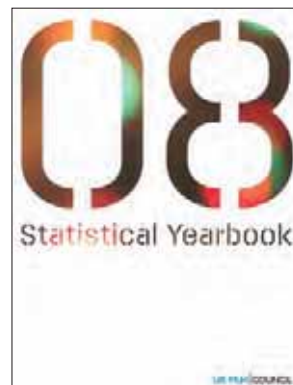
for file ingest at SATA 2 speeds. Features, trailers, policy reels and other content from national and local advertisers are quickly and easily ingested and scheduled for playback. There are over 5200 DCP-2000 server installations in service.

The DCP-2K4 includes CineL-ister software for easy movie clip and play list administration, and features Cinelink II and forensic watermarking. The DCP-2K4 includes 1 TeraByte of RAID5 storage in a 4RU chassis with redundant power supplies. [www.doremicinema.com](http://www.doremicinema.com).

## NEW UKFC YEARBOOK

The UK FILM COUNCIL'S latest Statistical Yearbook is now available on line and in print, and contains a most comprehensive and detailed analysis of film and cinemagoing in the UK in 2007. The 174 page A4 paperback yearbook is packed with facts and figures and covers everything from box office and admissions to audience taste, film production levels, the film economy and employment. It makes absolutely fascinating read, meriting a place on any film buff's bookshelf.

Copies of the 2007 Statistical Yearbook are available via the UK Film Council website



at [www.ukfilmcouncil.org.uk/](http://www.ukfilmcouncil.org.uk/) yearbook or in hard copy from UK Film Council, 10 Little Portland Street, London W1W 7JG.

## ARCTIC MONKEYS AT VUE

The hugely successful band Arctic Monkeys joined forces with VUE ENTERTAINMENT to give fans across the UK the chance to see their last gig of 2007 on the big screen. The Digital Cinema version of 'Arctic Monkeys at The Apollo', was screened at 33 Vue sites across the country for one night only during October. A 76 minute movie of the last gig in the band's acclaimed 2007 world tour, at the Manchester Apollo, which followed the release of their second album 'Favourite Worst Nightmare', was actually shot on Super 16mm film. The film was then remastered by Arts Alliance Media in 2K digital cinema with 5.1 surround sound, the highest quality of digital projection in cinemas today. The one night only screening featured an exclusive, personal introduction to the film by the band, filmed by Richard Ayoade. It was extremely successful, allowing audiences across the land to see a stunning piece of 'alternative content' cinema in the highest quality on the big screen. It was also released on DVD during November.

## SONY 3D ADAPTOR



SONY is demonstrating its latest digital cinema technology innovation: a single-projector 3D adaptor designed specifically to work with its CineAlta 4K projectors in movie theaters. The new adaptor uses the full height of Sony's 4K resolution SXRD imaging device, with the ability to display full 2K images for the left and right eye simultaneously and in parallel, from top and bottom. The new lens units, models LKRL-A002 and LKRL-A003 have zoom ratios of (x1.1 – 1.9) and (x1.9 – 3.3) respectively, and consist of an optical and mechanical assembly for each left and right eye image. It is designed to meet DCI specifications for 3D digital projection, while overcoming the bandwidth and resolution limitations of currently available single-projector 3D systems. The addition of the 3D adaptor to the Sony projector line-up can provide both stunning 4K imagery from 4K movies, and incredible 3D with no triple-flash artifacts.

When used with Sony's integrated media block (LMT-200), the SRX-R220 CineAlta 4K projector is able to achieve 4:4:4 RGB signal path from media block, while avoiding the "triple-flash" artifacting of current 3D solutions. It can also deliver a 60P 3D display that is especially effective for sports or other fast-moving content in 3D.

The system was developed to give exhibitors the flexibility to switch between showing 4K and 3D content. The 3D adaptor attaches onto the lens mount of the projector and is compatible with Sony CineAlta 4K projectors currently in the field using the LMT-200 Media Block. It can be easily removed or re-attached within minutes. The adaptor is designed to work with a maximum screen size of 17 metres /55 feet. Sony will be demonstrating the 3D adaptor in a technology suite at ShowEast in Orlando. The 3D adaptor is expected to be available in March 2009.





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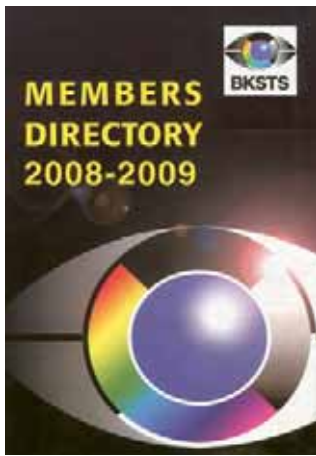


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dolby.com

# BKSTS MEMBERS DIRECTORY



## THE MEMBERSHIP DIRECTORY 2008 - an apology from the Hon.Sec.

A number of members have been in touch to note that their names have been missed out from the Membership Directory this year. We're sorry that this happened - the Directory is published for the Society by a company called Regent Press, and somehow the process of transferring the contents of the member database that is held on the Society's website into the printing system "dropped" a number of members.

Because we have only a very small team of volunteers to handle administrative matters, it was not possible to proof read the member listing prior to printing, so the errors were not spotted.

**The good news is that if you received a copy of the Directory then your name and address information is in the website database.**

**If you are a member and have not received a copy, please contact the Society as soon as possible - preferably by e-mail membership@bksts.com or by post.**

Please do not telephone, as the Society only operates an answering service for phone calls, and your query may not get proper response.

For cost reasons it will not be possible to issue an update to the Directory.

However, plans are in hand to ensure that next year's Directory is proof read in full before printing.

## NEW VUE FOR MERTHYR



VUE ENTERTAINMENT has invested £2 million in the Merthyr Tydfil Leisure Village development which opened in September 2008. There is a stunning eight screen stadium seated cinema with wall to wall and ceiling to floor huge screens. All auditoriums have Dolby Digital Surround Sound and the latest digital projectors to provide the ultimate picture and sound quality. Another major benefit of digital projection is the installation of Digital 3D, which offers a truly immersive movie experience, and Fly me to the Moon 3D was the first 3D movie to be brought to life in Merthyr on 3rd October.

All seats offer extra stretch leg room, and guests also have the opportunity to upgrade their seats to luxurious "Superior

Seating". These are wider, more comfortable, spacious leather seats placed in prime positions to view the big screens, making them the best seats in the house. In addition, giant bean bags will also be available in every screen. All this gives guests even more choice in seating and creates a unique environment for Vue customers to relax and enjoy their chosen movie in a level of comfort not seen before. Reserved seating is available, allowing customers to choose their seats when booking their tickets. Tickets can be purchased and collected at any till, allowing customers to purchase refreshments and tickets at the same time. In addition to movies, Vue will offer a wide alternative content programme.

These special events have included the highly popular screenings of Take That, Genesis, Kylie, La Scala opera, Formula One and Ross Noble.

An appetising selection of food, drink and bar refreshments is available, and alcohol can be taken into all auditoriums. Disabled access is available throughout the cinema.

## NEW CHRISTIE LAMP WARRANTY

CHRISTIE has set a new standard for quality and reliability with the introduction of the new Christie Champion Lamp Warranty. For all eligible lamps, Christie will provide a full 100% credit of the purchase price. The new warranty, effective October 2008, applies to all of Christie's CXL and CDXL Xenon lamps used for film and digital cinema projectors.

Previously the CXL-20 was 100% covered for the first 1,200 hours and pro-rated between 1,200 to



2,400 hours of operation. Now, the new warranty gives 100% coverage for the full 2,400 hours of operation.

The new Christie Champion Lamp Warranty reflects the company's continued confidence in the exceptional quality of its products, and Christie say that they represent the most competitive offer in the industry.

## SMPTE BKSTS AWARDS

The Society of Motion Picture & Television Engineers honoured entertainment technology innovators at the SMPTE 2008: Annual Tech Conference & Expo. Amongst the awards were: Journal Certificate of Merit, which was bestowed on Tomlinson Holman (Life Fellow of the BKSTS), professor, University of Southern California School of Cinematic Arts; A Citation of Outstanding Service to the Society was given to Patricia Keighley (BKSTS Member), vice president/general manager, David Keighley Productions 70mm, Inc. A Society Citation was given to Stanley N. Baron (BKSTS Retired Member), former managing director, television technology, NBC and former SMPTE President, 1995-1996.

## IMAX® DIGITAL JOINT VENTURE



IMAX and Cineplexx Kinobetriebe GmbH, the largest exhibitor in Austria, have announced a joint venture agreement to install three IMAX® theatres in Austria. The deal marks IMAX's first joint venture in Europe, and continues the company's global expansion with its new digital projection system. To date, IMAX has signed contracts for more than 180 IMAX digital projection systems. 18 are currently in operation with 45-50 scheduled to be in operation by the end of 2008.

The first theatre is expected to be installed in the city of Graz during the first quarter of 2009, followed by the second, in Vienna during the second quarter of 2009, with a third in the city of Hohenems during the fourth quarter of 2009. All three theatres will be equipped with IMAX's new digital projection system (see article on page 37). The MDs of Cineplexx Kinobetriebe say that installing IMAX theatres in their multiplexes will be of enormous benefit to their business and their customers, since it will provide a premium immersive movie experience that Austrian consumers will be delighted to have. IMAX's new digital projection system will be retrofitted into the existing auditoriums, and combined with IMAX's joint venture business model, is expected to offer to Cineplexx Kinobetriebe GmbH an economical and highly efficient way to enter the IMAX business.

IMAX say that this joint venture agreement is an important first step for their digital growth strategy in Europe, and that a partnership with Austria's leading exhibitor will help to strengthen the IMAX brand in the region and expand the audience base. IMAX's digital projection system delivers The IMAX Experience® and helps drive profitability for studios, exhibitors and IMAX theatres by eliminating the need for film prints, increasing program flexibility and ultimately increasing the number of movies shown on IMAX screens. The system can run both IMAX and IMAX® 3D presentations.



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## ODEON'S 'NO GLASSES' 3D



To tie in with the host of 3D films being released over the next year, Picture Production Company Group (PPC) has announced a UK first. It will be supplying the ODEON Leicester Square with a 42-inch Philips 3D WOWvx display, which allows customers to see 3D content – without the glasses. The screen will be in the cinema's foyer for a month, featuring 3D content created by the Soho-based full service creative marketing agency. The 3D display will screen branded content specially created for ODEON. The displays use lenticular technology, which has been patented by Philips, to make watching 3D without glasses a reality. "It's such a great opportunity to be the first to show this technology to the public in the UK and will give them a taste of 3D without glasses," said Chris Hilton, general manager of ODEON Leicester Square. "3D films that are coming out will still require viewers to wear the polarised lens glasses for movie viewing, but placing the display in our cinema foyer will give guests a taste of what 3D can offer – they'll be amazed."

## DCI COMPLIANCE TESTING AGREED

After long discussions, Digital Cinema Initiatives, LLC (DCI) has signed licensing agreements for compliance testing with CineCert, LLC in the United States, DMC/Keio University in Japan and Media Innovation Center in Italy. These entities will perform testing to determine whether manufactured digital cinema equipment and products are compliant with DCI's Digital Cinema System Specification. DCI is a joint venture of Disney, Fox, Paramount, Sony Pictures, Universal and Warner Bros, set up to establish and document specifications for an open architecture for digital cinema that ensures a uniform and high level of technical performance, reliability and quality.

Back in October 2007, DCI published its Compliance Test Plan (CTP), which includes validated test procedures for the DCI Specification, including all referenced standards of the Society for Motion Picture and Television Engineers (SMPTE).

In a joint statement, the member studios of DCI said, "These licensing agreements represent an important step in the maturation of the digital cinema marketplace. Through compliance testing, distributors, exhibitors, manufacturers and technology providers will have the assurance that equipment and products have been rigorously reviewed and comply with DCI requirements."

## ODEON ENDS AN ERA AND STARTS ANEW IN LIVERPOOL



*PPT North West's Mike Taylor reports ...*

The last link with the Golden Age of Hollywood came to an end with the closure of the Liverpool Odeon - London Road (above left). Built as the Paramount, it opened on 15th October 1934 and was one of several such theatres in key cities in this country. It became the Odeon in 1942 when J Arthur Rank acquired the lease along with other Paramount theatres. In 1954 it was Liverpool's first CinemaScope theatre, showing *The Robe*. Twinned in 1968, it became a quad in 1973, accommodated five screens in 1979, and was



later converted into a ten-screen multiplex. Nothing survived of the original opulent Paramount except the boarded up dressing rooms and the fly-tower over the stage area, which housed Screen Ten.

A new replacement Odeon (above right) with 14 screens has been opened in the Liverpool One shopping Mall at Paradise Street, close to the river front.

It is ironic that less than a hundred yards from the boarded up Odeon the offices and film exchange that belonged to Paramount Pictures has survived - there is now a bar and café there called "Bar de Mille".

## AAM TRANSMITS BY SATELLITE

Arts Alliance Media (AAM) successfully transmitted the 2008 Palme d'Or winning film, *Entre Les Murs*, in a full digital cinema



package (DCP) via satellite, direct to the library server at Circuit George Raymond (CGR) Cinémas' megaplex site in Bordeaux. CGR Cinémas is one of France's largest cinema chains.

The test transmission, of *Entre Les Murs*, distributed by Haut et Court, saw AAM using their new content delivery platform - Arqiva's Content Delivery Network. The 216 GB file was transmitted and loaded onto the server at CGR Villenave d'Omon without any operator intervention. Satellite transmission of digital films to cinemas is widely seen as the future of distribution, moving on from the current system of shipping digital cinema processed films on hard drives, resulting in considerable time and cost savings. Rich Phillips, AAM's Head of Technical Operations and a member of the BKSTS Cinema Technology Committee, commented "This is a first for AAM and we are pleased to have established the capabilities of our Content Delivery Platform, and believe that this test demonstrates the potential for future satellite delivery of content to cinemas." Arqiva Satellite & Media are working with AAM to provide delivery services for digital cinema releases, and also to provide satellite support for live events into cinemas. Arts Alliance Media has installed 374 digital cinema screens to date, including over 100 in France as part of the conversion of all CGR's 400 screens to digital.

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# Cinema an integral part of IBC

*Jim Slater reports on this year's event*



It is many years since the annual IBC exhibition and conference was known just as a broadcasting show, and these days IBC is for everyone involved in the creation, management and delivery of content for the whole entertainment industry, including cinema exhibition, which has been forming a growing part of IBC over the last ten years. This year's attendance at the RAI conference centre in Amsterdam broke all records, with 49,250 visitors and 1400 stands, filling every square metre of every one of the RAI halls, with outside exhibits also packed into every available space.

One of the reasons why the interest in cinema has grown at IBC is the availability of the magnificent 1800 seat RAI auditorium, a facility that has been well used in recent years to highlight the latest developments in Digital Cinema. As the publicity proclaimed - 'IBC is unique in not just talking about Digital Cinema, but in actually building one'!

IBC provides the opportunity to watch great movies in the finest possible viewing conditions, with the IBC Big Screen featuring excellent surround sound as well as the finest digital projection using state-of-the-art technology in a Digital Cinema that is built each year just for IBC in the RAI Auditorium.

Such an excellent facility allows leading suppliers in the industry to demonstrate their latest

developments, and this year the venue was particularly well used. Creatives were well catered for by presentations showcasing the RED 4K Digital Camera, with plenty of 4K footage shown on the big screen, by demonstrations of 2K Digital Cinema cameras from PS TECHNIK, and HD cameras from PANASONIC, and by ARRI, who showed their latest state of the art analogue and digital cameras.

## SCREENINGS

The many screenings in the Big Screen auditorium over the duration of the show culminated in the Monday night special 3D HD cinema screening of Journey to the Center of the Earth, courtesy of Warner Bros International, New Line Cinema and Walden Media, an event that had people queuing to get in long before the advertised start time. Eric Brevig, the director of Journey to the Center of the

Earth, gave a five-minute introduction and then, after the magnificent screening, the audience were able to participate in a Q&A session.

On the cinema exhibition side it was good to see that companies like DOREMI, CHRISTIE, REAL D and DOLBY were playing a major part in putting the big screen experience together, and Brian Claypool's presentation for Christie of 'What is a D-Cinema reference projector?' caused much interest as he reviewed the latest standards and made it plain that there is far more to a DC projector than maximising light output.

## CINEMA EQUIPMENT MANUFACTURERS

In the various themed exhibition halls many of the well known cinema equipment companies had stands, but they weren't generally showing cinema equipment at this broader-ranging 'content - focused' exhibition. There was a DTS stand, but this turned out to be the DTS Digital Entertainment group, and not our friends from DTS Digital Cinema, now a completely separate and different company since it was bought out to be run as an independent entity by Beaufort International Group in May 2008. DTS Digital Cinema specializes in providing solutions for the delivery and exhibition of movies and other content in digital form, with a dedicated focus on supporting the industry's ongoing transition to digital cinema. [www.dtsdcinema.com](http://www.dtsdcinema.com).

DOLBY had their latest cinema kit on show, including the SCC2000 Secure Content Creator which provides





a complete toolkit for encoding and packaging digital movie files, but cinema formed only a small part of their stand's all-encompassing audio equipment display, much of it aimed at broadcasters. Dolby staff were fully involved with the conference and the Big Screen events, contributing both technically and in giving presentations and comments at many of the Digital Cinema themed events. In the ever-more competitive 'whose is the best 3D Digital Cinema system?' scenario, Dolby came out fighting with the important announcement that its reusable 3D glasses are now offered at the significantly reduced list price of US \$27.50, compared with the previous US \$39.00, making them even more cost-effective, especially when it is considered that the high-performance, environmentally friendly passive glasses require no batteries or charging. Dolby claim that because they are reusable, the per-ticket cost of Dolby® 3D glasses is expected to be well below the cost of disposable 3D glasses.

CINEA, the Dolby company that specialises in

content protection, was also represented on the Dolby stand, primarily demonstrating the latest version of its 'Running Marks™' forensic watermarking technology which embeds unique and traceable information into video streams, so that an individual video stream can be identified. The watermark message is robust and survives the typical counter measures that pirates apply to stolen content.

I had almost despaired of seeing a film projector on the exhibition floor, although RTI and its subsidiaries Lipsner Smith, BHP Inc, Calder Equipment and Filmlab Systems International had plenty of film processing and cleaning equipment on show at their stand. PHOTOMECH, which specialises in the design, manufacture and commissioning of film processing machinery and film handling equipment from 8mm to 70mm for feature-film laboratories, film archives, TV studios and post houses had their usual stand. This year it featured the latest version of its PIMOS control and monitoring system for film processing machines, an in-line film viewer for use on processing machines or in any film path, its servo-winder for fast and safe winding of all film types, and a new product providing print and process control without a densitometer.

#### A FILM PROJECTOR AT LAST!

Fortunately, the KINOTON stand restored my faith in the projection business attending IBC. Kinoton stood out as one of the relatively few stands showing film projection equipment. The FP30 projector on show (below left) was equipped with their FTU film transfer unit. A CCD camera replaces the projection lens head, allowing video pictures to be taken from the film. The studio projector can easily be converted from normal projection to transfer operation and vice versa. The system features synchronisation between camera shutter and film transport, real-time full-frame scanning at either 24 or 25 frames per second and within the speed range of the projector. It's a 35mm film projector, of course, but there is a 16mm option available. Although the unit I saw provided only a VGA (640x480) output, different cameras for standard definition and high definition formats are also available.

Kinoton were also showing their useful VT 600 Film

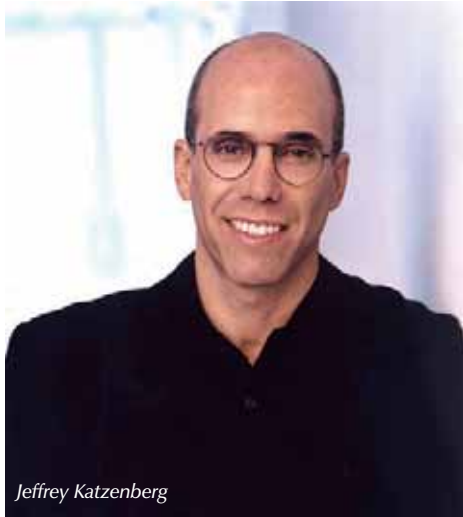
Viewing Table (below), designed for use in studios, printing facilities, and archives. A built-in scanning unit and RGB light source allows any film stock and film material (pos or neg) to be digitally viewed on the large screen, bringing together the advantages of old-fashioned hands-on film handling and the latest in display technology.

#### 3D LIVE AT IBC

Sunday evening saw the auditorium packed for what was claimed as a technical 'first' - a live 3D HD transatlantic interview with Oscar nominee and multi award-winner Jeffrey Katzenberg (next page), CEO of DreamWorks Animation SKG and an innovator in the Hollywood creative and business arenas. Katzenberg was interviewed in Los Angeles by Elizabeth Daley, Professor and Dean of USC's School of Cinematic Arts, who did a great job in linking LA with the audience in Amsterdam. The LA interview took place in a garden setting at the Dreamworks Animation facility at Glendale, and the fact that it was in 3D was interesting (it showed that it could be done!) but little more than a gimmick in this instance, with a necessarily restricted range of shots, and several people reflected my thoughts that the 3D images often resembled the old 'Viewmaster' pictures, with the different parts of the picture appearing in separate vertical planes rather than being truly realistic and natural representations of the scene. Technically, though, making it all work so well was a triumph, and the engineering teams involved are to be congratulated. The live 3D stereoscopic HD broadcast was delivered to the IBC big screen using 3Ality Digital's 3D image capture and transmission encoder/decoder technology, and communication specialist Arqiva provided the high bandwidth HD satellite circuit to Amsterdam. Christie and RealD provided the stereoscopic images projected at the conference.

Jeffrey said that he thought that within a reasonable period of time, all movies are going to be made in 3D, and that 2D films are going to be a thing of the past. He foresaw changes with the 3D glasses, suggesting that dual-purpose specs might act as normal sunglasses outdoors, becoming 3D glasses in the cinema, and he reflected a point of view that we have seen previously in Cinema Technology, that people will choose to buy and own their own glasses, just as you have your own





Jeffrey Katzenberg

tennis racket or golf kit.

He showed some excellent 3D movie clips, including tests from "Kung Fu Panda" and from "Monsters Versus Aliens", and demonstrated some of the fascinating work being done with advertising agencies - it is as though 3D is the ideal medium for advertisers, who can make the ad literally jump out at you and capture your full attention in the cinema. He wasn't so sure about converting existing 2D movie titles to 3D, though, being unconvinced that many of the existing results had been of high enough quality, but he said that such conversion tools are getting better and he certainly didn't dismiss the conversion route in the future. As far as the ongoing transition to Digital Cinema projection is concerned, which is needed to enable digital 3D, he was disappointed at the relatively slow rollout, predicting 2,500-3,000 US screens for the release of "Monsters."

At the end of the session, which had proved technically flawless, Elizabeth Daley did a live on-air presentation of the IBC 2008 International Honour for Excellence to Jeffrey, who said that he was thrilled to be among the distinguished list of recipients to have received this honour. He said that DreamWorks aim to create and deliver quality and innovative entertainment for audiences across the globe and was very grateful to IBC for acknowledging its efforts.

#### DIGITAL CINEMA THEME DAY

Monday was the occasion for the by now traditional IBC Digital Cinema Theme day, which was entitled New Dimensions for the Big Screen, giving the hint that it would be focusing on stereoscopic 3D movie

making and presentation. There was a whole range of presentations concerning 3D digital technologies in cameras, post production and projection systems, although I felt that there was less about projection than I would have liked, probably because digital projection has now become well established, meaning that those wanting something 'new' to shout about are moving on to enabling stereo 3D, which really does add a new dimension to the cinema experience. Much of the interest is financially driven, since the early box office results from some of the first Digital 3D movies have been spectacular, showing that it might be possible to attract new cinemagoers and to provide important commercial opportunities for the movie business. There were many discussions and questions about whether the 3D Digital Cinema systems can deliver the necessary returns in the long run, but nobody yet has anything like all the answers.

In an interesting session on 'Workflow Revolutions', Chaired by David Dawson-Pick, BKSTS President Roland Brown had brought together and introduced a fascinating range of speakers, several of whom were on and off the podium in little more than a couple of minutes, which had the excellent result that each speaker concentrated firmly on his own particular bit of the message and the audience never had time to even think about being bored. The manner of the presentations reminded me of the Comedy Club performances, but the speakers were far more erudite, of course, and there was no need for any of them to be 'hooked' off! Rapid-fire speakers included Andy King from the BBC and Paul Walland who spoke about the MUPPITS (Multiple User Post-Production Services) research and development project set up to address the ever increasing challenges faced by the Post Production Industry. Jason Power of Dolby, a recent convert from the film industry to the world of broadcast sound, rapidly brought us up to date with developments in 'loudness' estimation and the new ITU-R Rec. BS.1770 measurement methods, and Peter Wilson gave us a crash course in the need for the new BBC-developed, royalty free DIRAC compression system.

Howard Lukk from Walt Disney Studios chaired a panel session on 'Capturing and Creating Stereoscopic 3D Content', looking at the science behind and the practicalities of producing the best 3D images, and this tied in well with the previous day's 'Masterclass' on 'A Production Language for 3D' which had taken the attendees right through from the basics of 3D vision to working with the Quantel Pablo on 3D post-production.

#### CINEMA PRESENTATION

The word 'alternatives' in a session in the auditorium entitled 'The presentation alternatives, and considerations for exhibitors', Chaired by Nico Simon of the Luxembourg Utopia group, had misled some attendees into thinking that it would be about Alternative Content, but that wasn't how it turned out. There were some excellent presentations, with Richard Welsh from Dolby providing a sparkling talk highlighting the vital message that if a 3D movie is to be any good all elements of the movie, not just those concerned with 3D, must be equally excellent, and he amused us with his string of aphorisms ranging from 'Only a fool tests the depth of the water with both feet' to the 'Pay no attention to the man behind the curtain' line from The Wizard of Oz, reminding us all of the key truth that cinema is at its best when you really don't notice the technology.

Mark Welton of IMAX® brought us up to date with the plans for Digital IMAX, which we cover in detail elsewhere in this issue, and he provided basic technical information about how the system will be installed in large numbers of existing multiplex auditoria plus lots of facts and figures about the box-office success of 3D IMAX, including the fascinating fact that Polar Express in 3D IMAX brought in 25% of the total box office revenue for the film even though it showed on only 1% of the total cinema screens. He reminded us that success cannot be guaranteed, however - IT HAS TO BE THE RIGHT FILM - but his talk could be readily summed up by his firm statement about Digital IMAX 3D - THE ECONOMICS ARE COMPELLING!

Presentations from Mohammad Ahmadi of XpanD ('cool' new glasses and a 'green' solution to 3D) and Matt Cowan of RealD brought us up to date with developments in their areas of 3D Digital Cinema, and it was interesting to hear how Real D's engineering team has developed its most recent innovation, the Real D XL "light-doubler", an optical assembly that fits in front of the standard DLP Cinema projector, replacing their previous "Z-screen" shutter assembly. The XL filter recovers most of the light lost in the polarization process, allowing Real D 3D to be used with a single projector on screens as wide as 60 feet.

The Q&A session which followed asked about the need for distributors to provide different masters for the different 3D systems, and the answers given were contradictory. One speaker said that the files should be the same, others said that separate 'ghost-busted'



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versions have to be made. After some argument it seems to be the case that currently two different versions of the digital master are required, one requiring to be 'ghost-busted'. This will be overcome and a single unified version will be usable 'in the not too distant future', but when Chairman Nico asked for clarification of when this might happen, there was none forthcoming, so 'don't hold your breath' would probably be the appropriate advice. Another question was how frequently the mechanical filter wheel in the Dolby 3D cinema projectors needs maintenance. Richard Welsh said that no extra maintenance is required, the wheel assembly needs calibrating on its initial action but thereafter it is self-synchronising.

### HOME CINEMA, TOO

Home Cinema and home entertainment wasn't forgotten at IBC, I was surprised to see, as one session focused on 3D in the home environment. At the moment 3D is generally felt to be 'unique to cinema', but with 3D HDTV now being demonstrated in several formats, the question as to how long 3D will be a unique cinema attraction needs to be thought about. SMPTE

President Robert Kisor emphasised a need for a 'single distribution master', a standard distribution file format for 3D content viewed in the home, and I was interested to learn that this is a prominent issue on the SMPTE agenda. SMPTE has established a 3D Home Display Formats Task Force to define the parameters of a stereoscopic mastering standard that will enable 3D feature films and other programming to be played on all fixed devices in the home, no matter the delivery channel. The goal is to get to a single distribution master, just like that being finalised in digital cinema, and trying to avoid a situation like the former Blu-ray/HD DVD 'standards war'. In 3D there are maybe four different formats, and you don't want to have the consumer trying to sort out different copies of something to figure out which one plays on their particular combination of hardware. It will be important to get the Consumer Electronics Association to participate, so that a consumer-friendly system can be generated.

### BEYOND HIGH DEFINITION

Talking of home entertainment, two years ago at IBC I raved over the Japanese Ultra High Definition TV system.

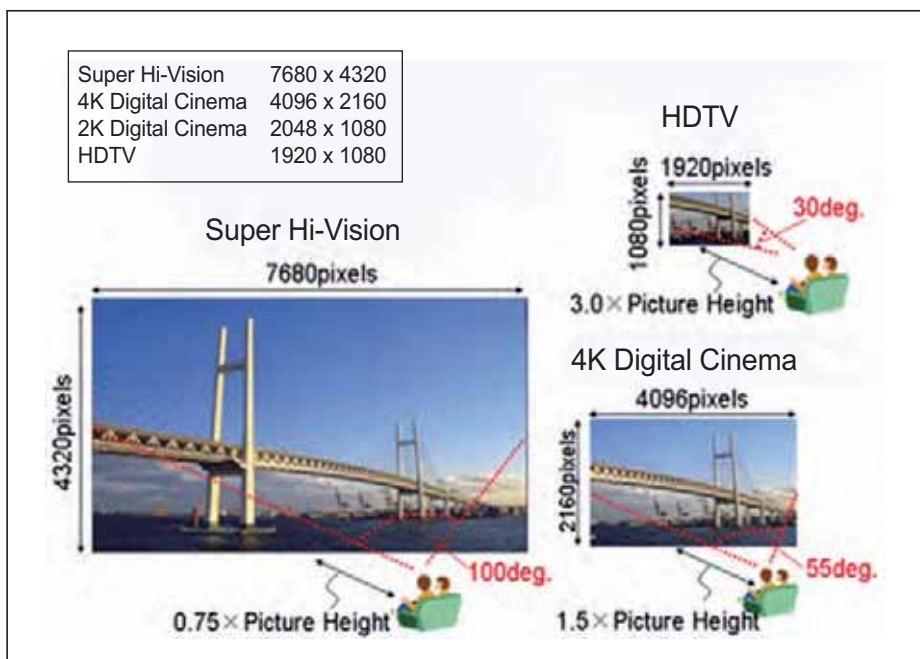
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Things had moved on a great deal by this year's IBC, and now originators NHK have been joined by BBC, RAI, EBU, and partners Cable and Wireless, Eutelsat, Siemens and SIS. The partnership is now known as The Broadcast Technology Futures Group, and together they demonstrated the world's very first live international transmissions of what has now become known as live Super Hi-Vision, now an international project.

In an absolutely amazing series of regular demonstrations throughout the show, camera images were delivered from the top of London's City Hall via fibre to a specially constructed 'cinema' near Hall 8 at IBC in Amsterdam. On each occasion a member of the Amsterdam audience was able to ask the BBC cameraman in London to zoom in on any chosen part of the image of Tower bridge, and the images really were fantastic - just like looking through a huge plate glass window. When you see such detailed images at a close viewing distance it is interesting that there is also a very natural 3D feel to the 2D images - being immersed in the pictures gives a very different feeling to watching from further away. There was also lots of realtime pre-recorded content ployout via satellite from Turin. The presentations were carefully prepared,

with tickets available beforehand, and you had to join a cinema-style queue before entering the tented auditorium. Each presentation was introduced and the links to London coordinated by a young Japanese presenter, and great care was taken to provide a sense of 'occasion'. The only clue that these magnificent images and sound were part of a research project was the fact that dozens of uniformed engineers were milling around before and after the shows, just to make sure that everything went perfectly. This proved very useful when I had the temerity to notice a very slight fault on the live link transmission, when one of the engineers was happy to explain exactly what had gone wrong (one of the four codecs slightly out of synch) and to assure me that it doesn't happen very often!

It was good to see that IBC recognised the huge potential of this project, when at the IBC Awards Ceremony Dr Kubota, Director-General of the NHK Science and Technical Research laboratories, was presented with the IBC Special Award on behalf of the Broadcast Technology Futures group and commercial partners.

#### EDCF AT IBC

Members of the European Digital Cinema Forum

played a role in many of the cinema related presentations and events at IBC, and on the Tuesday of the event organised the final technical session of IBC, an EDCF Open Meeting, which formed a fitting conclusion to the IBC Digital Cinema programme. Under the Chairmanship of Peter Wilson of HDDC UK, a far-ranging panel session took a look at where Digital cinema has gone in the last year, both technically and from the point of view of those in the industry striving to make a sound business case for its implementation. As well as looking at the current successes the group examined various territories in which the Digital Cinema roll out hasn't yet happened, looking at the financial and technical reasons behind this.

There was quite a lot of technical 'meat' arising from the panel discussions, not only considering how the compliance and certification schemes originally developed for the US are being applied in Europe, but also examining how the specific requirements of European cinema operators are being built into the developing SMPTE standards.

The EDCF Open meeting was also used as the launchpad for the Forum's latest, brand new publication, The EDCF Guide to Alternative Content in Digital Cinema (Below left). This 40 page technical booklet brings together specially written articles from experts in many facets of Digital Cinema, and it is intended to provide information and help to any any cinema operator who is considering becoming involved with the showing of Alternative Content. Copies can be obtained free of charge from the EDCF General Secretary, John Graham at [jgedcf@talktalk.net](mailto:jgedcf@talktalk.net)

#### AWARDS FOR CINEMA

With all the cinema-related 'stuff' at IBC I thought it was truly fitting that both the prestigious IBC Innovation Award Judges Prize and the Innovation Award for Content Creation should go to the companies who had been involved in the post-production of Walt Disney Pictures' "Hannah Montana & Miley Cyrus: Best of Both Worlds Concert" film (below centre).

The photograph below shows Ray Cross, Quantel; Bill Schultz, FotoKem; Howard Lukk, Disney and Todd Cogan, PACE receiving their award from Michael Bunce OBE, Chairman of the IBC Partnership Board.

*Jim Slater*



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Dion Hanson, Cineman, tells the story of the recent technical refurbishment work at Pictureville and how the projection team now have a level 'playing field' to work on.



Since space was at a premium in the original projection room it was also decided to try and free up some space. Two ideas I came up with were to move the power amplifier back stage and to try and re-configure the motors on the Cinerama dubber so it took up less floor space.

Projection Manager Duncan McGregor pointed out that back-stage there was a small gallery from the theatre days which was now unused that would be ideal for the amplifiers. This meant that the speaker trunking that came from the projection had to be diverted to this new position and new line level and remote cables run from the projection room to amplifiers.

After almost a year all plans, quotes, dates etc were agreed and the job started at the beginning of July this year. The planned closure was four weeks since the old equipment and cabling had to be removed before the building contractor could begin. Then of course once he had finished the reinstallation could begin. At least all the projection equipment was on the higher level and so none of these pieces of kit were to be removed.

It was decided that back stage the amplifiers would be split into two racks, one containing the main screen amplifiers and the other surrounds and sub bass. Also there was the fact that the screen amplifiers have to supply two screens. This is because there is the set of speakers for the curved Cinerama screen and the set for the normal flat screen. Changeover was to be done via relay rather than the plug and socket system previously used since the amplifier outputs would be no longer readily accessible.

The first day of the job began with a delay, in that the powers that be had booked a show in for the afternoon. So we began by disconnecting the bits we didn't need for that particular presentation. It was a little bit like the game 'Kerplonk' where you keep taking bits away and hope the rest of it stays up. It must have looked strange to the customers as various bits of projection equipment were wheeled past them just before the show.

Once the builder had started in the box (left) I moved back stage to organise the lifting of the new racks onto the gallery. After which I could begin fitting the flexible tubing and diverting the existing speaker cable trunking to the new racks. Access to the amplifier platform was via a vertical steel ladder - it may have only been a few metres but after a couple of days I was regretting agreeing to site the racks above ground level!

Speaker cables were diverted from both sets of speakers, which entailed sitting on top of the Cinerama screen frame to change them over. Obviously when they were installed nobody an-

# Pictureville Bradford ... refit

When the Pictureville Bradford was converted from a live theatre to become the Cinerama cinema we know today, as with all conversions compromises had to be made, and of course cost also raised its ugly head. Because of this, only part of the projection room floor was raised to accommodate the projectors. The remainder was left at its original level and the amplifier racks, re-winder etc. were on this lower level.

Through the years a lot of extra equipment was added including the DP70, which as everyone knows is not a small piece of equipment, and also the Christie D-Cinema projector. This made the raised section more difficult to negotiate

and inevitably one of the projectionists missed his footing one day and fell off, resulting in several weeks off work. Consequently it was decided to rework the projection room and make it all on one level.



This sounds a simple task to begin with but just like Topsy it grew and grew. Through the years as Dolby Digital, DTS, SONY, and D-Cinema arrived extra cables and processors were added to the already complex sound rack. This resulted in lots of extra cables passed above the suspended ceiling or cable tied to the conduit. So it was decided that all these cables should be rerouted on new cable trays and also extra cables added for future expansion. Then it was decided to install a new suspended ceiling as the old one had been changed so many times to allow for the extra ducting etc as the new projectors were added.



*Pictured clockwise from top left: Allan Foster hoisting the first rack into place backstage; connecting the audio and control back up to the CP200; testing the Cinerama 7 channel magnetic replay; Darren Briggs trying to breathe some life into the digital projector; the DP70 with the new Kinoton digital / optical head and the reworked selsyn motor on the Cinerama follower.*

anticipated that we would require access to them at a later date.

Once the cables were connected and tested it was time to tackle the dubber so that it would be ready to go into its new position. In actual fact the modifications were easier than anticipated, and with help from the museum's tool room the conversion was complete.

Then it was the turn of the main audio processor rack. Once this had been tidied up and various pieces relocated within the rack it was amazing how many interconnecting cables had been removed. The only hope being that they were redundant and that we wouldn't be requiring them later!

After two weeks the new floor had been laid and the new ceiling installed and it was time to begin reinstating the amplifier rack and all its ancillary equipment. Several pieces such as the magnetic

preamps for the dubber were sited closer to the heads instead of in the rack. Similarly the digital time delay for the DVD player was moved into the AV rack next to the equipment it was associated with.

All the cables which had previously been thrown across the ceiling were laid in the cable tray and reconnected to the CP200, DTS, SONY or whichever. Along with extra digital cable feeds for any up and coming digital equipment which may be brought in for festivals and cinema lets.

One last job was to install a new analogue/digital sound head to the DP70. Now I know that some diehards will say that this is sacrilege but it does mean that it can play modern film formats. I must say that, as you can see from the picture, Kinoton have produced a beautiful piece of kit. Plus it does mean that the old girl still has many years of life in her.

Finally it was time to start testing and checking that everything was still functioning. Needless to say there were a few glitches but nothing insurmountable. Probably what took most of the time was the reworking of some of the equipment. That is to say that as the job went along the guys kept saying 'well it worked OK in the past but wouldn't it be nice if!!'. So it was really 'the ifs' that took the time in the rebuild.

Opening day dawned and I must say it seemed to go well, save that again the powers that be dropped it on us that on the Saturday they had advertised a Cinerama screening. But again it all tested out and worked. Watching the team cue everything up prior to starting the mechs one can see maybe why Cinerama is still not with us today. The only thing that refused to start was the digital projector. It would appear that the UPS had given up the ghost. Need I say more? I rest my case.

Dion Hanson FBKS

# Venice the end of an era

Dion Hanson writes...

I have written several articles about the Venice Film Festival over the years but for me this last one was a very sad one. The last CP200 has been removed!



It was 22 years ago that I first attended the festival and at that time the two CP200s were new. They were the latest thing in cinema sound and to many engineers quite a daunting piece of equipment.

Over the years they have been modified and re-modified to take in Dolby SR, DTS, SDDS, Dolby Digital as well as all the mods I did for 16mm, Sep Mag, etc.

Even though the CP200 coped well it was beginning to sound its age. One thing it did do that other Dolby processors couldn't was accommodate three projectors.

Consequently when the CP200 was removed from the Sala Grande last year it took two CP650s to replace it. The first CP650 did projectors 1 and 2 and the second CP650 projector 3 and all the 'digital stuff' via a Dolby DMA8+.

However, what we didn't realise was that the format selection would become a nightmare for the projectionist. Not only did he have to decide what format but also what processor. Unfortunately with a CP650 you do not know what U1

or U2 does until you hit the button, and it was different on each processor.

So this year it was decided, when the CP200 was replaced in the Pala Galileo, to control the CP650s by computer using a touch screen interface for the projectionist. This meant that the operator did not touch the CP650s but controlled the whole show from a computer screen. This included fader level and monitoring facilities.

The software for all this was written by Marco Stefani (right) a freelance engineer from Rome who also does work for Technicolor, he wrote the software for some of the equipment they use to protect prints from piracy. He also is a consultant for DTS and SDDS so he is not unfamiliar with sound as many computer programmers are.

As I say it was sad to see the last CP200 get relegated to the storeroom but for both the projectionist and audience there is a noticeable difference in both operation and sound quality. In fact the projectionist loved its simplicity. So much so it was decided to rework last year's installation in the Sala Grande so that next year it will be the same as the Galileo.

Dion Hanson



## Zero from Dolby Digital

Whilst in Venice we show hundreds of films but I thought that readers might be interested in this picture I took during the screening of a Danish film.

As you will see from this image of the display screen on a CP650 the Dolby Digital print being screened was running with an error rate of zero. Something which we do not see from the



bulk release prints, received at the cinema.

This reminds me that the Cinema Technology Committee has for some time now been gathering information about the sound quality of the prints that are used in cinemas. So as to be able to garner actual factual information and separate this from the 'rumours' about the

failure of digital sound tracks on some prints after a few days or weeks, many projectionists, especially in the Odeon chain, have been regularly providing the CTC with data about digital sound error rates, screen by screen, and week by week. We now have spreadsheets that are allowing us to begin to analyse this factual data, and although there are many variables, we are hoping to come up with some meaningful results in the months to come. Thanks to all those who have helped so far, and if you are a working projectionist who would be prepared to contribute to this valuable work by regularly filling in a simple form, please contact me at [cinematech@btinternet.com](mailto:cinematech@btinternet.com)



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SEE THE WORLD IN A NEW LIGHT





# Between the arclight and the Xenon

Jim Slater looks at the technology behind the 'Revolutionary light source' - the Philips SPP Pulsed Discharge Lamp - which promised so much to the projection boxes of the 1960s but has since disappeared, almost without trace. It is fascinating to see how much research and development work Philips put into this projection light source, which, according to the Chairman of the BKSTS Cinema Technology Committee, was 'a technology that appeared before its time'.

**T**alk to most projectionists about projection lighting, and all but the youngest, who certainly can't be blamed for not knowing anything other than today's ubiquitous Xenons, will tell you about how cinema projectors from the very earliest times used carbon arcs to provide a wonderful light, ideally suited to bringing out the characteristics of movie film. There were many skills involved in working with carbon arcs, which led to projectionists developing a pride in ensuring that they mastered the art of getting the best from this equipment, which certainly brought with it many challenges and difficulties, requiring pretty constant attention from the projectionist, and making any ideas of remotely controlling projectors mere fantasies at the time.

These integral, perhaps undesirable 'characteristics' of arc lamp systems included:

- Skill is required to initially 'strike' the arc cleanly
- The arc had to be allowed to burn for several minutes before use, to stabilise
- The carbon electrodes must be long enough to last for the duration of the reel
- The incandescent ball of gas in the crater of the positive electrode tends to shift its position relative to the mirror focal point, diminishing the light output and the colour of the picture if the projectionist doesn't make adjustments
- The combustion products must be removed safely
- The arc causes differential heating of the film, with the picture area becoming hot and the edges remaining relatively cold, leading to film buckling which affects the focus of the

image. (These effects were to be even worse with xenons, of course.)

## A FIRST TRY AT A REPLACEMENT - THE MERCURY VAPOUR DISCHARGE LAMP

It wasn't surprising, then, that a substitute for the carbon arc had long been sought, but what will surprise many projectionists is that as far back as 1938 Philips actually introduced a motion picture projector whose light source was a high-pressure mercury-vapour discharge lamp. The 1kW lamp, which was small compared with an arc-lamp set up, was driven by a 500 volt 2 amp direct source, and was water cooled. Water cooling was obviously an unwanted complication, but it is interesting that at that time some carbon-arc lamps already used water-cooled jaws holding the carbons, so the technology was obviously manageable. Unfortunately, the new system had several other disadvantages, which led to its being abandoned within a relatively short time.

- The first problem was that there could be brightness variations, difficult to control
- The colour spectrum of the light produced by the lamps was less than ideal, which gave rise to real problems in accurately reproducing any reddish colours in a movie
- The lifetime of the mercury vapour lamp was not easy to predict, and lamps would fail suddenly, without warning, interrupting the performance
- It took quite a long time to fire-up the spare 'standby' lamp that was used in the projector.

Although most of the technical limitations could probably have been overcome with perseverance,

the basic fact that the light wasn't a suitable colour for projecting movie films proved enough of a disadvantage to kill the system commercially, and the carbon arc lamp reigned supreme in the cinema for the following 30 years and more.

## 1958 - THE PHILIPS SUPER-PRESSURE PULSED MERCURY VAPOUR LAMP

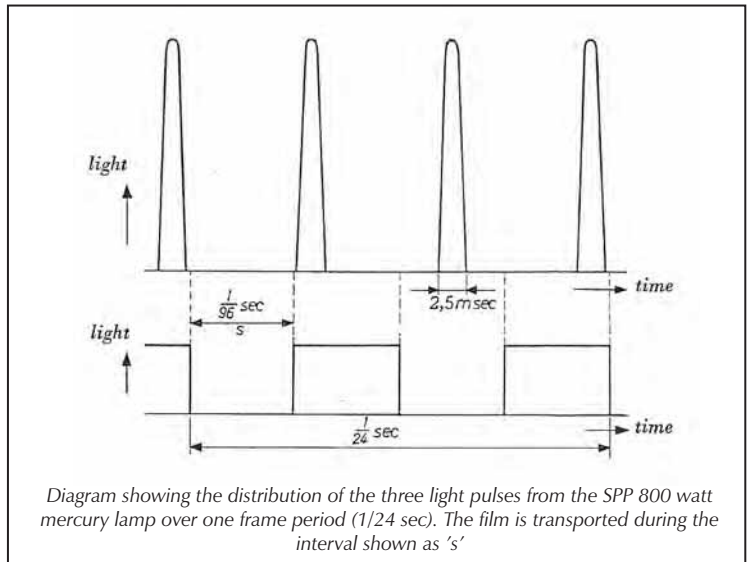
It is rare to read of senior industry figures 'raving' over new projection technologies, so it is fascinating to read in the archives that BKSTS Fellow R H Cricks reported from the 1958 Photokina exhibition in Cologne that he had seen and obviously been considerably impressed by

*'A CinemaScope picture 45 foot wide, illuminated to a level of 20 foot-Lamberts (certainly on a Perlux screen!) by a lamp smaller than a discarded negative carbon stub, consuming only 800 watts'.*

That futuristic Photokina 1958 demo, which also involved a projection system being controlled from the auditorium, allowing focus, racking, brightness, sound and a complete changeover to be done remotely, made use of a newly developed Philips lamp and a revolutionary design of projector, the FP20S, created to make optimum use of the lamp's characteristics.

Philips research engineers had obviously been busy during the intervening years, and their revolutionary new light source was actually a development of the 1938 technology. Philips Technical Reviews of the time explain how the colour spectrum of the lamps could be improved (made broader and





whiter rather than just having the narrow 'line' spectrum of a normal mercury lamp) by increasing the load on the lamp, but this reduced the lifetime significantly. They also worked on 'pulsing' a lamp to reduce the mean power, but this too led to lifetime problems. They therefore developed a different design of mercury lamp which included far less mercury - a 'dose' just sufficient to ensure that all of it was vaporised when the lamp was burning. They had major problems with getting reliable seals and electrical connections, but overcame all these and, with the addition of a trace of Argon gas developed a lamp which had significantly better colour rendition throughout the visible spectrum than any other mercury vapour design.

The Philips SPP Super Pressure discharge lamp was tiny, and looked rather like one of those clinical thermometers that you put under a child's tongue to take its temperature. It was 80mm ( $\frac{3}{4}$  inches) long and 5.6mm ( $\frac{1}{4}$  inch) in diameter. The actual discharge occurred in a 17mm parallel walled section of the glass tube. The pressure inside the lamp when cold was less than atmospheric, but this rose to around 100 atmospheres at running temperature. It was claimed that these pressures presented no risk, since the lamp was so tiny, and was also enclosed in a water jacket.

The lamp was carried in a holder, behind which was a tiny cylindrical mirror just 11mm x 9mm, and the mirror is renewed when the lamp is changed. The whole assembly was fitted into a water jacket, the face of which is formed by an aspherical condenser lens. This tiny optical system produced an extremely even light distribution over the screen, with a remarkable side to centre ratio of 95% being claimed.

The SPP discharge lamp housing contained a turret holding a spare lamp, and things were arranged so that if the lamp failed in use the spare lamp automatically moved into position, providing an almost imperceptible blackout on the screen.

The 800 watt pulsed lamp, when used with a projection lens of aperture f2 could provide 4800

lumens on screen, and with a larger aperture lens of f1.6 could provide 6000 lumens.

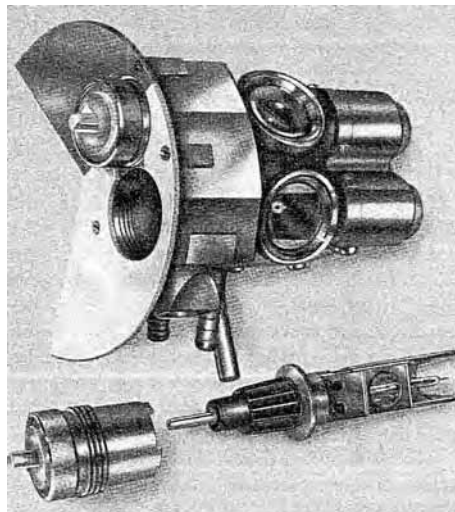
### PULSING THE LIGHT - EFFICIENCY GAINS

CT readers will be familiar with the way in which a conventional projection system has in-built inefficiencies as the light from a constantly burning source is interrupted whilst the film is moved from frame to frame and whilst the rotating shutter intercepts the light twice per frame. During these periods the light from the lamp is effectively wasted. The revolutionary Philips lamp and projector system overcame this by cleverly feeding the lamp with current pulses, and since the light output from a mercury vapour lamp closely follows the current variations, virtually without inertia, it proved possible to flash the projector lamp on and off synchronously with the passage of the film frames through the projector. This meant that it wasn't any longer necessary to have a mechanical shutter to interrupt the light beam - the light was effectively switched off during the required 'blanking' periods. But, perhaps even more importantly, the light could be made to flash three times per film frame, rather than the conventional twice of the mechanical shutter (this factor being limited because of the loss of light when the shutter was closed). This meant that there were effectively 72 light flashes

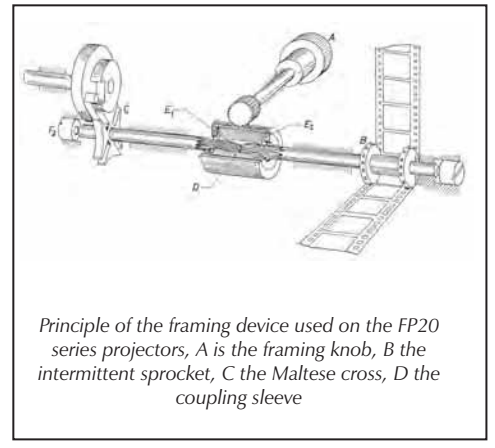
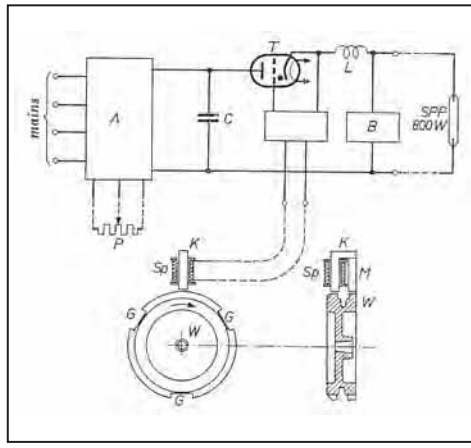
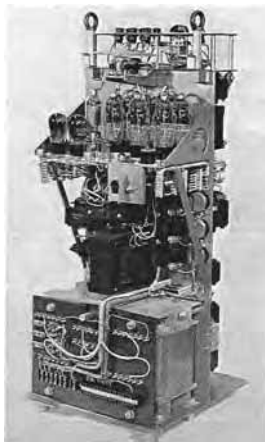
per second, instead of the usual 48, thus sensibly eliminating flicker.

You never get something for nothing of course, and although the system provides far more useful light and makes for a simpler projector without a shutter, the pulsing made it difficult to obtain satisfactory service lifetimes whilst maintaining the desired colour spectrum. The final version represented a compromise between useful lamp life on one hand (determined by the mean load of the lamp - the lifetime reduced sharply as the lamp brightness was increased) and the colour rendering, which was found to depend on the peak amplitude of the current pulses.

The eventual choice, with a lamp known as the SPP 800, and which worked well in practice, was to drive the lamp as a mean load of 800 watts with current pulses of 15 amps. (The initial lamp striking voltage was 1000 volts). This gave an average life of 33 hours when providing a light output of about 40,000 lumens and on screen images of equivalent brightness to those from a 60 amp carbon Arc. This today seems a very short operating life, but if the current was reduced to provide a lamp load of 600 watts, adequate for many smaller cinemas, the lifetime of the lamp was doubled. Interestingly, I came across an old advertisement in 'Hooper's Heap' showing that the famous J Frank Brockliss company was selling the SPP lamps at fifty-two shillings! Even allowing for inflation, I guess that is much cheaper than one of today's Xenons, but I wonder how the costs per hour compare?



Although the projector design might be simpler, providing the high-power pulses to drive the lamp necessitated a complex pulsator, using a six-phase rectifier charging a capacitor, with a pulse applied to the grid of a thyatron acting as the trigger to discharge the capacitor through the lamp. The pulsator and its basic circuit diagram are shown below, and I am sure that this type of technology must have been quite new to many projectionists in the 1950s. Modern solid-state electronic devices would, of course, make the construction of such a pulsator much simpler today.



Principle of the framing device used on the FP20 series projectors, A is the framing knob, B the intermittent sprocket, C the Maltese cross, D the coupling sleeve

### A PROJECTOR DESIGNED FOR THE SPP

Coinciding with the launch of the SPP800, Philips also brought a completely new design of projector to the market. Based on the FP20 model which included a conventional arc lamp, the FP20S was designed and built to use the new technology of the SPP discharge lamp. The FP20S didn't of course include a shutter, but it was notable that bearings for a shutter were installed, just in case later modification to a conventional lamp system should be required. The projector system was highly regarded for its simple chain-driven design where all components were readily accessible, and where all elements of the film path were mounted on a flat panel, making the initial installation simple.

A novel framing/racking device was used with the FP20 series, allowing framing adjustments to be easily made whilst the film was in motion, perhaps to correct for a badly framed splice.

Another novelty for 1958 was the use of transistors in the low-power audio stages, although the output stages had to use ECC83 and PL36 valves.

The then revolutionary idea of being able to control the projector remotely, from the auditorium if necessary, was achieved as a result of the incorporation within the projector design of a potentiometer to allow the lamp brightness to be adjusted, with motors for focus and framing. The remote console also had controls for houselight dimmers, an emergency stop switch and sound controls.

### JOBS FOR PROJECTIONISTS?

The old adage 'the more things change, the more they stay the same' came to mind as I read R H Cricks portentous remark in *The Ideal Kinema*, October 1958 during his review of the Philips system with its remote control facilities:

*'The place for the Chief projectionist is no longer in the projection room, but in the auditorium! At the Dutch cinema where this equipment has been running, the usherette, I was told, is given the job of making any necessary adjustments, and idea which appalled me.'*

### SO WHAT HAPPENED TO SPP?

My researches into the Philips pulsed lamp system left me very impressed; it seemed such a sensible idea, providing very even screen illumination and

eliminating flicker, and I was therefore interested to know why it hadn't caught on in the longer term, and why the big, constantly burning and therefore inefficient Xenon had become the norm.

Discussions with colleagues on the Cinema Technology Committee who were around at the time suggested that the system was indeed a very good one, with lots of advantages. But the restricted lamp brightness meant that the system wasn't really suited to big screens, and many of the FP20S projectors were installed in preview theatres. Unfortunately, the use of water cooling and the complexities of the pulsation system meant that the whole arrangement became too complex to handle on a long-term basis in many cinemas. Whilst the system was basically sound, the need for regular inspection and maintenance of the additional pieces of equipment meant that projectionists couldn't just leave the kit unattended for long periods.

In spite of the ostensibly simpler projector, with no need for a shutter assembly, and the promises of unattended remote control, the inclusion of the water cooling and of the electronics relating to the lamp synchronisation meant that a projectionist's life became even busier than before. Couple that with the limited lifetime of the lamps (to be

changed every 33 hours, no matter how simple the process was claimed to be) and it is perhaps no surprise that at a time when the much longer lasting Xenon lamp was beginning to appear on the scene, in spite of its disadvantages of heat and inefficiency, and the need to treat it extremely carefully when handling it, cinemas chose to go down that route instead.

As Dion Hanson, CTC Chairman, said, "Many of the ideas were great, but the pulsed lamp technology appeared before its time". Maybe with modern manufacturing techniques and today's sophisticated control technologies the idea could be re-visited?

*Jim Slater*

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Thanks to Gerald Hooper MBKS for photographs and extra information.

## Toilet Humour?

**Dion Hanson tells the tale of a cinema that he knew which used the Philips pulsed lamp projector system.....**

The Classic, Sheffield had a pair of FP20S projectors, and shortly after installation the cinema complained that they shut down every night at 8pm. After much investigation by engineers, no fault could be found, but in order to sort out what was happening, it was arranged that an engineer would remain on site one evening, so as to be there to see what happened at 8pm.

Sure enough, at 8pm the projector lamps went out, but it didn't take the engineer long to spot the cause. 8pm was the time of the sales interval, during which all the ladies rushed to the loo and subsequently flushed them. This caused a drop in water pressure which caused the lamps' safety circuitry to shut them down!

A cold-water header tank was installed just for the projector water-cooling system, and that soon solved the problem.



# Sounds new from QSC

## Sound solutions for smaller cinemas

Developed specifically for the unique requirements of professional motion picture playback in smaller cinemas, QSC's new SC-2150 loudspeaker is one of two new members of the DCS (Digital Cinema Speaker) Series.

Offering high-power handling, excellent sensitivity, and extended bass response in a very compact enclosure, the SC-2150 is a three-way, selectably passive full-range or bi-amplified screen channel loudspeaker system comprised of two main units: A mid-high frequency system and a low-frequency enclosure. The components are easily assembled on-site via a pan and tilt bracket that mounts the mid-high components to the top of the LF enclosure.

The mid-high system features a high output, horn-loaded 6.5" midrange cone driver and a 1.4" (35.6 mm) diaphragm compression driver mounted to an adjustable pan and tilt bracket. QSC's patented Cine-Sight simplifies aiming of the horns for proper audience coverage.

The dual 15" (381 mm) low-frequency enclosure is designed specifically to address the extended low-frequency response required for cinema applications. The compact LF device is only 14.5" (368 mm) deep, reducing the space required behind the screen. The enclosure is constructed of high quality MDF panels and features Single Woofer Chambers (SWC), which provide separate chambers for each transducer. In the rare event of a transducer theft or failure, this prevents over-excitation of the remaining transducer caused by improper box loading. Outfitted with Symmetrical Port Loading (SPL) as well, the bass ports are evenly spaced on each side of the transducers, making internal pressure more uniform across the back surface of the drivers. This prevents the cone from being displaced to one side



Above: The SC-2150 and below the SR100



or another by unbalanced forces, reducing the chance of driving the voice coil out of the center of the gap at high power.

The SC-2150 includes a driver protection network and a passive crossover for bi-amp and full passive operation. Power limiter circuitry protects the high-frequency and mid-frequency drivers from overpowering. A simple switch setting determines the operating mode and eliminates dual inventory and ordering issues associated with fixed bi-amp or passive models. The 3-way design provides exceptional coverage of the critical midrange band for improved dialog intelligibility.

The SC-2150 is designed for ease

of installation. Three bolts are all that are required to secure the mid-high system to the top of the LF enclosure. A pre-wired harness and connector plugs into the terminal plate to provide all electrical connections to the mid-high system. Pre-installed rubber feet speed installation, thereby reducing labor costs.

QSC's new SR-8100 cinema surround loudspeaker is the second newcomer to the DCS Series built expressly for use in smaller theatres. Offering high power handling, excellent sensitivity, and extended bass response in a very compact enclosure, the device features a long-throw 8" low-frequency transducer coupled with a 1" soft dome tweeter. The system's MDF enclosure incorporates a 15° down angle baffle and easily

accessible top-mounted terminals. The 125 watt continuous power rating and sophisticated crossover with protection circuitry provides absolute reliability, while the black-finished enclosure with black grille blends easily into any theatre environment.

A proprietary QSC design, QSC's QuickMount bracket design allows for fast, easy and secure installation of the SR-8100. The loudspeaker half of the bracket comes pre-installed on each SR-8100, while the QuickMount QM-SW wall bracket is purchased separately to facilitate shipment to the job site ahead of the loudspeakers. A traditional U-bracket, the YM-300, is also available in lieu of the QuickMount bracket system. The SR-8100 is shipped in pairs to reduce shipping costs.

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# Meeting the digital challenge

by Alcons Audio's Tom Back

With the Digital Cinema standard now becoming reality, new challenges have arrived for existing equipment; Requirements of the sound system have changed; Speech, music and effects should be reproduced with finest non-compressed detail and fullest digital dynamics.



4" pro-ribbon transducer

It is especially the "24-bit, non-compressed" part of the standard that is dramatically challenging the end of the B-chain; Not only in terms of frequency response, but also in terms of transient response, with the 24-bit resolution dynamics causing traditional loudspeaker systems unsolvable problems. Note that all current "state-of-the-art" cinema sound systems are still based on 90 year old (compression!) driver loudspeaker technology for mid/high frequency reproduction, with very limited flat frequency response and with up to 90% Total Harmonic Distortion.

In order to meet the intentions of the Digital Cinema standard, new thinking is required. This means new challenges have arrived, also bringing new opportunities.

Newly designed pro-ribbon transducer technology brings a different, but proven sound reproduction quality, that can deal with the high resolution and dynamic SPL demands of new, uncompressed media. But, the technology can also offer more: "proximity-effect", enhancing the realism of cinema even further.

Line-array sound systems, although not new, have gained a strong reputation in sound reinforcement, as they offer significant advantages in even "front-to-rear" SPL and projection control over a defined area.

The main criteria for getting a well designed array, is to get all drivers working together, instead of working against each other. Since each frequency has a different wave-length, the secret to "summing" is that

the sources/speakers must be closely coupled, with a distance less than half a wavelength of the highest frequency they have to reproduce. The result is a so-called "cylindrical wavefront". A cylindrical wave front (below left) has typically a 3dB SPL reduction per doubling of the distance, whereas a spherical wave-front has a 6dB reduction per doubling of the distance.

For low frequencies this is no problem, where the size of the speaker is well within "half of the wavelength". The real challenge is in mid and high frequencies, where the physical size of the speaker is too big for its wavelength, resulting in individual point sources working against each other (formula "Wavelength = Speed of Sound divided by Frequency").

As correct summing of multiple sources is physically not possible at these higher frequencies, the only solution is to have one transducer generate a cylindrical wavefront. The pro-ribbon transducers have this cylindrically-shaped radiation pattern by nature, making it the ideal building block for line-source based systems.

As the next step in the company's evolutionary Digital Cinema sound system program, Alcons has implemented, as an industries' first, line-source technology throughout the entire cinema sound front system.

All sections are designed to operate within the established line-array parameters; This combines maximum acoustical output (through driver coupling) with optimized projection control, making large waveguides obsolete and also enabling a very shallow system design for space economic mounting.

For the mid-high section, Alcons Audio implemented her

System response at 10,000Hz.



Array of triple 4" pro-ribbons with resp. 4°, 10° and 15° angle

proprietary multiple-patented pro-ribbon transducer technology. By utilizing the cylindrical coupling behaviour in an array of three 4" pro-ribbons, the shape and output of the mid-high frequency pattern can be controlled by adjusting their relative angles. In this way, more MF/HF energy can be projected towards the rear of the room to compensate for SPL loss over distance; The resulting "proximity" effect dramatically improves the cinema experience for the audience further away from the screen.

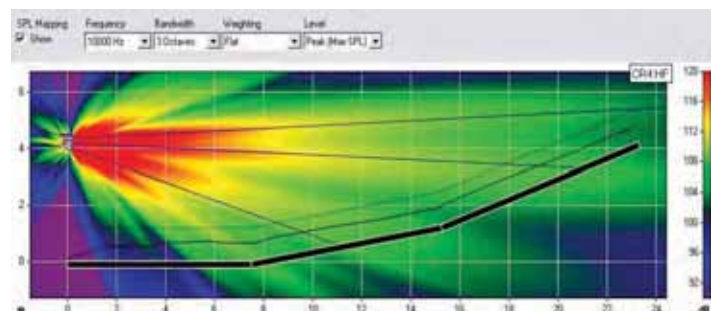
Another advantage of the precise vertical projection control is that less energy is projected against the ceiling, further improving the experience due to lack of indirect sound / reflections.

In the horizontal plane, the patented Real-90 dispersion widens the stereo experience for far left and right seated audience.

The first product to feature this design concept, is the company's CR4, large-format pro-ribbon cinema front system.

More information can be found on [www.ribboncinemasystem.com](http://www.ribboncinemasystem.com).

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# Christie 'Sters' it in Africa

## Market leader goes digital

**S**ter-Kinekor Theatres, the cinema market leader in South Africa, Zambia, Namibia and Zimbabwe, made a start on its digital cinema rollout by converting three screens to 2k digital, with two having 3D capability, thanks to the acquisition of Christie CP2000 2K D-cinema projectors.

Part of the Primedia Group, the circuit contains more than 400 screens in 55 theatres, giving them a 66% market share. In the last year alone they have added 60 screens to their portfolio, with more promised in the next 12 months.

Ster-Kinekor auditioned the Christie CP2000 against two competitive brands, preferring the simplicity, quality of picture, and reliability, backed by the reassurance of local support; this followed meetings with Christie representatives at ShoWest in Las Vegas and Cinema Expo in Amsterdam.

The company initially brought in a CP2000 on a six-month rental agreement for the launch of Happy Feet - and then purchased the unit. The next two were based on feedback from technical staff and the relative ease with which the project ran - from an installation, operational and support perspective.

The company is using Real D digital stereoscopic projection technology, with delivery to the projector via a Doremi digital cinema player. At the same time the screens have been upgraded to Harkness silver screens.

Ster-Kinekor first acquired a CP2000X 2K projector, with the split body, for the Sandton City multiplex, their flagship complex. They followed this up with the simultaneous acquisition of two CP2000S projectors (with electronic switching ballast) installed at The Zone at Rosebank and the Gateway multiplex in Durban - launching with the spectacular Beowulf in 3D.

As it moves moves to the next phase the company will put one in Brooklyn, Pretoria, in Cavendish; Cape Town and another in Johannesburg, which will enable them to develop a national footprint.

All multiplexes will have 3D screening capabilities and there will be a direct correlation between the number of 3D screens and the digital rollout.

As from the technical support side Ster-Kinekor didn't really have that infrastructure. However, their technicians were able to carry out the installation entirely with telephone support from Christie.



# Christmas Quiz

This year's quiz is about observation, something projectionists world wide are good at when looking through the porthole. In the good old days the ports were so small that you literally only observed a small part of the screen. This helped him to concentrate on the top right hand corner for the cue dots. In true tradition the pictures below are only part of a larger one that has appeared somewhere in this years editions of Cinema Technology. So search out Volume 21 Nos 1-2-3-4.

The good news is that this year we have a prize for the first correct set of answers drawn at the January Cinema Technology Committee meeting. Jack Roe will be supplying and presenting the prize in the form of a (post) Christmas hamper to the value of £100, well worth receiving just as the bills are arriving on your doorstep at the end of January.

Send your answers - STATING THE PICTURE NUMBER FOLLOWED BY THE ISSUE NUMBER AND PAGE NUMBER ON WHICH THE ORIGINAL COMPLETE PICTURE APPEARS - to [cinematech@btinternet.com](mailto:cinematech@btinternet.com). Or telephone 0116 279 322 giving the above information along with contact details ... and GOOD LUCK!

The Christmas Quiz is kindly sponsored by Jack Roe (CS) Ltd.

Number 1



Number 2



Number 3



Number 4



Number 5



Number 6



## Projectionists' Christmas Party

The CTC Christmas party will be at the Odeon Leicester Square on Monday 15th December 2008 from 12noon – 4pm.

It will include the presentation of the Projection Team of the Year Award and the Frank Littlejohns Award for an outstanding contribution to the art and craft of cinema projection.

Invitations will be sent out early in December. If you don't receive yours, and would like to come contact Chairman Dion Hanson email [cinematech@btinternet.com](mailto:cinematech@btinternet.com)

Party kindly sponsored by Bell Theatre Services.

Projection Team of the Year Award kindly sponsored by Dolby Labs.

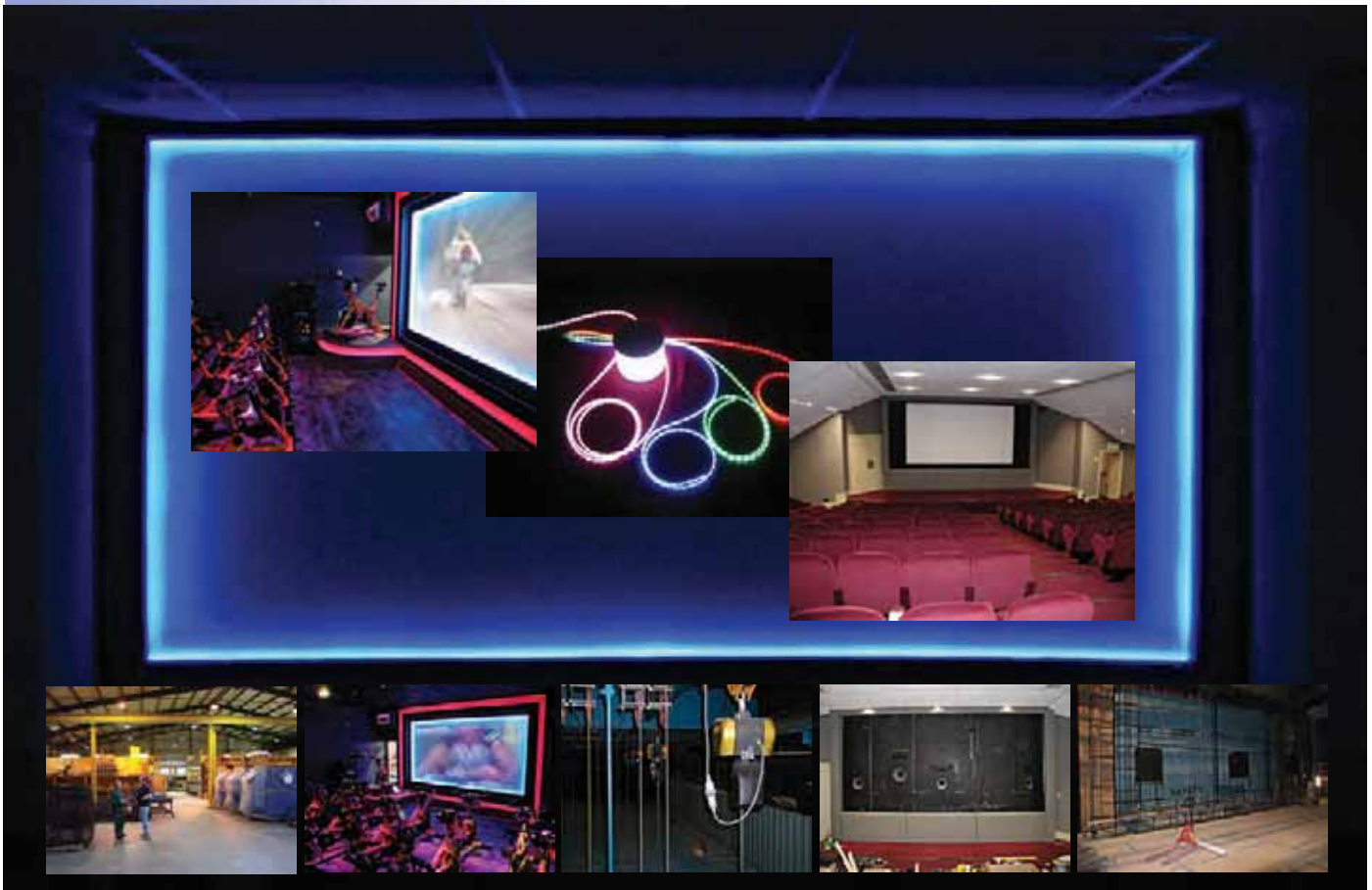




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Installing Real D 3D <a href="#">Briggs, Darren</a>	CT	jun	46	Ken Shankster retires after 45 years <a href="#">Slater, Jim</a>	CT	jun	31	<a href="#">Slater, Jim</a>	IT	jan	14
Digital Projection Triumph - Premiere of Prince Caspian at London 02 Arena				Hastings Odeon Chief retires after more than 30 years <a href="#">Slater, Jim</a>	CT	jun	48	Book Reviews: Understanding Telecommunications Networks (Andy Valdar)			
<a href="#">Slater, Jim</a>	CT	sep	14	Meet the Chief: Darren Payne <a href="#">Slater, Jim</a>	CT	sep	32	<a href="#">Slater, Jim</a>	IT	jan	19
First all-new & all digital screens in the West End, at the Empire Leicester Square				Meet the Chief: Liam Hughes, at the Savoy Dublin <a href="#">Guckian, Brian</a>	CT	dec	34	<b>Television</b>			
<a href="#">Slater, Jim</a>	CT	sep	24	<b>Post Production</b>				Book Reviews: Switching to Digital Television (Michael Starks)			
Digital Awareness Day <a href="#">Slater, Jim</a>	CT	sep	44	Digital Projection Supplement - Improved mastering facilities at Dolby				<a href="#">Slater, Jim</a>	IT	apr	9
Christie "Sters" it in Africa (Market leader goes digital)	CT	dec	29	<a href="#">Slater, Jim</a>	CT	mar	40	British Mechanical Television Pioneers: John Logie Baird			
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<a href="#">Aldred, John</a>	IT	apr	17	Victor Nicelli retires after 44 years, but the Cinemeccanica tradition continues				<a href="#">Slater, Jim</a>	CT	jun	35
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The State Cinema Gainsborough <a href="#">Briggs, Darren</a>	CT	jun	24	A trillion discharges per second - New Osram XBO lamps				<a href="#">Slater, Jim</a>	CT	jun	35
				<a href="#">Hicklin, Jason</a>	CT	mar	34				

Brian Guckian MBKS met Liam Hughes, Chief at The Savoy Cinema, Dublin and learned much about Dublin's cinema history

# Meet The Chief



**W**ell known and respected by the many industry technicians and print managers who have worked with him, the career of Liam Hughes, Chief Projectionist of the Savoy Cinema, Dublin, reads like a recent history of the city's cinema scene.

Liam's long and distinguished career has seen him at the helm of Ireland's "premier hall" for 20 years now, and he continues to take his work – which often involves high-powered premieres – modestly in his stride.

Recently, some gaps in his busy schedule permitted me to take the opportunity to interview him for Cinema Technology.

It was June 1955 when Liam began in the industry, as a page boy in the newly-opened Stella Cinema in the Dublin suburb of Mount Merrion (pictured far left and now a furniture showroom). The projection room with its twin Westars was spacious: "You could play soccer in the box", he recalls. At this time his father was Chief Usher in the cinema in the nearby suburb of Rathmines, which was also called the Stella, and was adamant that his son take a "proper" job in the Irish Electricity Supply Board (ESB) or the nationalised transport undertaking (C oras Iompar  ireann – CI ).

But Liam was bitten by the projection bug - "I woke up one morning and decided to be a Projectionist – like someone being hit on the head!". Predictably Liam's father was aghast at this development, describing the occupation as "a dead man's job" and remarking that "the only time you get promotion is when someone dies!".

However, once placated by Liam's mother, his father relented and Liam began as Apprentice Projectionist at the Theatre Deluxe in Dublin's Camden Street (pictured left now a hotel) on December 19<sup>th</sup>, 1955. He recalls that Valley of Fury – a western from Universal starring Victor Mature - was playing at the time. The Theatre Deluxe operated on Simplexes fitted with Kalee President arcs. Like many of his generation, Liam still prefers the quality of light from carbons.

Promotion to 3<sup>rd</sup> Operator took place in 1960, and Liam moved to the much-missed Metropole Cinema in Dublin's city centre in 1964, again as 3<sup>rd</sup> Operator. The Metropole (now known colloquially as the "Old Metropole" to prevent confusion with another cinema of the same name that opened later on) was located off the main thoroughfare, O'Connell St., and adjacent to the historic General Post Office (GPO), which played such a prominent role in Ireland's 1916 Easter Rising. Interestingly the Metropole still had full nitrate protection fitted to its Kalee 21s into the 1960s, with built-in fire extinguishers and retaining its porthole shutters. Liam

also recollects the unusual triangular shape of the cast-iron, sealed spoolboxes of the Kalee 21s. The Metropole at this time also had the distinction of being the only cinema in Ireland that used the Essoldo Projectomatic automation system, whose labour-saving properties caused Projectionists to fear for their jobs – concerns that resonate in today's era of digitisation! Liam recalls the cotter pin-based mechanical relays and how the system was sensitive to variations in mains supply voltage.

### ON TO THE SAVOY

Across the street and further up from the site of the former Metropole is Ireland's "premier hall", the Savoy Cinema (top right), and it was to here that Liam moved in November 1969. At this time, of course, "twinning" and "tripling" of former single-screen cinemas was becoming regrettably (at least from an architectural standpoint) widespread, and the Savoy was not to escape, being twinned using the standard method of creating a new auditorium in the former balcony area (further splitting has occurred down the years so that today the Savoy has a total of six screens).

Liam was promoted to 2<sup>nd</sup> Operator at the Savoy in 1982 and became Chief in 1988. The Savoy was owned by the UK Rank Group until 1985, when their interest was bought out by the current owners, the Dublin Cinema Group (a subsidiary of the Irish-owned Ward-Anderson chain).

By way of the former Rank ownership, dual-gauge 35mm / 70mm Cinemeccanica Victoria 8s (badged as Rank RK60s) were installed for the 1968 twinning and remain "in solid service" today, according to Liam. Vic 8s were also later installed for the subsequent screens 3, 4 and 6. (The Vic 8 in Screen One is pictured centre right with Dolby Digital and DTS pent-house readers evident).

Liam would like to see 70mm return especially to the Savoy 1 screen, with its traditional décor, curtain tabs, curved screen, gently-raked seating and recently-overhauled sound system (see sidebar). However, though he likes watching 70mm, he doesn't particularly like projecting it! "Every thread is your first thread with 70mm", he notes.

That said, he has fond memories of the 70mm

Roadshows, citing El Cid and The Fall of the Roman Empire, and recalling that they had to "back" (strengthen) joins in the prints using then newly-introduced splicing tape.

Liam has three other Projectionists working with him at the Savoy, on a "two on / two off" basis. They carry out almost all the maintenance work themselves, and in common with many large cinemas, also look after the upkeep of electrics and lighting and tend to general building maintenance issues.

### FOUR PROJECTION ROOMS

Four different projection rooms on different levels keep the projectionists on their toes, and unusually – and perhaps instructively – Liam prefers tower operation, with a Cinemeccanica DGB 4/4 carrying out this duty in Savoy 1.

I was (pleasantly) surprised to see a Cinemation diode matrix automation system dating from 1970 still giving sterling service in the main projection room (bottom right), and perhaps it is this simplicity and reliability which is key to the high standard of presentation at the Savoy.

Like all dedicated Projectionists, Liam takes pride in the craft of showmanship, and this is seen in the main screen with its traditional tabs and house break between the supporting programme and the main feature.

And like many in the business, Liam achieves greatest satisfaction from the job "when everything goes right" – even more so given the onerous responsibilities when screening "red-carpet" premieres, which are a normal, regular occurrence at this pivotal location. Though the build-up to these events is invariably stressful (and when I visited Liam was chasing the first reel of a crucial premiere title that was being sent separately as an anti-piracy measure), his unflappable manner and unflinching professionalism always ensure things go according to plan.

### FILM FESTIVALS AND PREMIERES

Equally challenging are the demands of the Dublin International Film Festival which takes place in February each year. Liam chuckles when he recalls how around 15 years ago, a cancellation in the festival programme led to him having to screen, at no notice, a print of Heaven's Gate, which not only was in very poor condition, but was also in 70mm! After an





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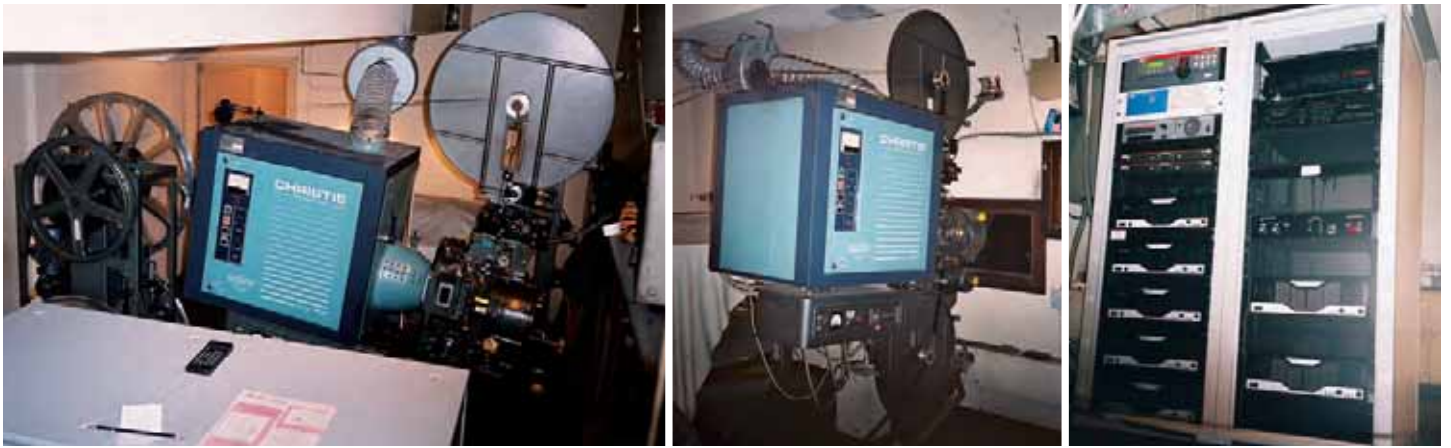
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Left: General view of the installation in Savoy 1, showing Cinemeccanica DGB 4/4 tower supplying the Victoria 8. The Christie lamphouse uses a 4.5kW lamp. Right: The comprehensive sound rack features a Dolby CP650 processor with Surround EX, a DTS unit, induction loop for the hard of hearing and bi-amplification via Crown amps. The sound system was revamped in 2004 by Dion Hanson FBKS.

extremely hasty re-conversion of the Victoria 8 in the Savoy 1 to 70mm format and after lining up the sound as best he could (apparently there wasn't even time to summon an engineer), the show hit the screen and – with constant attendance for fear of film breaks - was carried out successfully. However the regional United Artists manager, on calling 2 days later, was subsequently asked, in relation to the print, if he was “going to throw it in the Liffey”!

Another nerve-wracking occasion was the double premiere, in Dublin and Cork, of Michael Collins for Warner Bros., with the film screening in 5 of the cinema's 6 auditoria. Star Liam Neeson became delayed travelling from Cork due to bad weather, and Liam recalls the prolonged, apprehensive shifting of various

dignitaries and VIPs in their seats as they waited for the famous actor to arrive.

#### LOOKING AFTER PROJECTIONISTS

Apart from his duties at the Savoy, Liam has also been heavily involved in maintaining and improving pay and working conditions of Projectionists through his long-serving role as Chairman of the Cinemas and Theatres Section of Ireland's largest trades union, SIPTU. Indeed he was instrumental in negotiating enviable terms and conditions of employment for Projectionists when the multiplexes arrived in Ireland in the early 1990s.

He does feel that the cinema business is now over-saturated, with too many screens in Dublin at least, and despite ongoing digitisation, still

believes that film provides the best exhibition experience. He also laments the relative decline in film handling standards over the years, but actively addressed this by playing a key role in bringing the CTC projectionist training seminars to Ireland in 2002.

As I left Liam to continue preparations for the Savoy's latest premiere, I appreciated having had the opportunity to talk to this fine craftsman of the silver screen.

Thanks to John Donnelly of the Savoy Cinema, Dion Hanson FBKS and Colum O'Riordan of the Irish Architectural Archive for their assistance in preparing this article.

Brian Guckian MBKS

## XDC's Portuguese deployment

180 digital screen rollout



XDC, the leading Pan-European digital cinema service company, and ZON Lusomundo, the largest cinema chain in Portugal have signed an exclusive agreement for the deployment of digital cinema systems in 180 of ZON Lusomundo's cinema screens in Portugal.

The agreement signed between ZON Lusomundo and XDC includes the roll out of DCI-compliant projection systems co-financed by the Virtual Print Fee (VPF) model. Rollout is scheduled to begin in January 2009 with an initial commitment of 100 screens throughout the rest of the year.

Under the terms of the agreement, XDC will exclusively install DCI-compliant digital projection systems: Barco 2K Cinema projectors and XDC's CineStore® Solo G3 D-Cinema servers. XDC will also implement a fully integrated and networked solution in each complex, thanks to its advanced Theatre Management System and Central Library, the XDC's CineStore® Plaza.

This partnership with ZON Lusomundo will be the first digital cinema network in the southern part of Europe and XDC expect to announce additional deployment deals in other countries soon in order to reach 1000 installed digital screens across Europe before the end of 2009.

## Ushio - green is the colour

98% recycling achieved



Just over a year ago Ushio's Harima (Japan) plant became the first Xenon manufacturing plant in the world to become ISO14001 certified, a standard for environmentally friendly production.

In the company's latest quarterly reports it was stated that the recycling ratio in Xenon production had reached an average of 98%, almost meeting the target of zero emission.

About 5 years ago Ushio introduced the High Efficiency Series of lamps which give, depending on lamp type and projector, proven 15% to 35% more light at same power. These lamps give at significantly lower power the same screen brightness as conventional lamps. Today the energy saving can exceed £80 per lamp and in future it will only increase. This helps to save the environment and your money. The reduced power also leads to slower deterioration of the lamp, which is acknowledged by Ushio with a 50% extended warranty when lamps are used in the so-called “eco mode”.

To learn more about Ushio's environmental protection activities, including their annual sustainability report, go to <http://www.ushio.co.jp/en/eco/index.html>

Ushio's Nils Beuker also points out that the Ushio lamp Angela is holding (page 62) has been de-gassed.

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# IMAX® Digital

## It's IMAX, but not as we know it, Jim!

**I**MAX Digital started its US rollout in the summer, installed at three specially converted multiplexes in Washington and three in Philadelphia. Deals have been done to install around 180 IMAX Digital systems, and 50 are expected to have been installed in AMC and Regal Entertainment Group cinemas by the end of the year.



### THE UK STORY

Perhaps more relevant and exciting for many Cinema Technology readers is the story that Odeon cinemas in Wimbledon (Screen 4) and Greenwich (Screen 9) are, as we go to press, undergoing the substantial reconstruction work necessary to provide the Digital IMAX experience for their customers. Odeon are no strangers to IMAX, having operated the tremendous IMAX screen at their Manchester Printworks (pictures right) site for some years now (Cinema Technology took a look there in its June 2001 issue) but the Printworks IMAX uses traditional 70mm 15 perf IMAX film, (pictures below) whereas the new sites will be the first UK mainstream cinemas to take advantage of the new IMAX Digital system.

The Odeon installations are being carried out by Odeon Engineers Austin Jones and Mark Hurst, with Nigel Shore from Imagineering. The current timescale as we go to press is that their team is working towards an early December opening.

The huge silver screens from MDI (Canada) are

being installed by long time Cinema Technology supporter Frank Powell's company, and it will be interesting to see how they overcome some of the unusual challenges that these projects will undoubtedly set.

Although everyone has been very helpful in getting information to Cinema Technology magazine for this issue, we obviously couldn't cover the final installation when we go to press three weeks beforehand, so readers can look forward to some pictures and further details in the March 2009 issue.

Changes to the cinemas include the replacement of existing screens with silver screens that extend to the full height and width of the auditorium, with the screen closer to the seating area to increase the 'immersive' experience. This can mean that some rows of seats are removed. In most auditoria with stadium seating the existing seat rake angles will be shallower than in purpose-built IMAX cinemas like the BFI IMAX at Waterloo, providing a narrower 'field of view' which might make the

experience less immersive. IMAX say that the system is intended for screens no larger than 44 x 70 ft, but this is much bigger than the typical screen in a UK multiplex. The existing sound system is replaced with a digital IMAX five-channel sound system – the reduced screen height compared with a full-sized IMAX system presumably means that the usual IMAX top speaker isn't required.

### WHY IMAX DIGITAL?

One of the problems in spreading the IMAX system has always been the studio distribution costs. A 70mm IMAX print can cost, typically, anything from around £12,000 per print for a 2D film to £25,000 per print for a 3D title. When you consider that the equivalent digital content could be delivered on hard drives for the phenomenally lower cost of a few hundred pounds per digital print, the advantages of Digital IMAX show up as clearly as the magnificent images that the system can provide.

IMAX Digital has been built on the founda-

tions provided by the previously developed IMAX technologies, including large-format feature-length content and 3D, and makes use of the more recent developments in providing lower-cost cinema designs which aim at bringing the unique immersive IMAX experience within the reach of mainstream cinema exhibitors. By developing a system to provide a digital replacement for the 70mm 15 perf film projection format, IMAX Digital promises to provide a really cost-effective way of bringing the IMAX experience to far more cinemas and cinemagoers.

#### MEETING THE STANDARDS

The system uses an all-new digital projection path including a custom-designed digital projection system based on the latest generation of Texas Instruments' DLP Cinema technology. IMAX have not yet claimed that the new system is fully DCI compliant, but since it uses the basic DLP technology which has been optimized in recent years to meet the stringent demands of the Digital Cinema Initiatives specifications, IMAX Digital has effectively been built on the foundations of the DCI digital specifications and as such should be readily DCI-compliant, which is a vital condition to be satisfied if the Hollywood studios are to agree to provide their content. As an example of this inbuilt compatibility, IMAX Digital uses the DCI security system, Key Delivery Messages, and will play standard DCI-specified Digital Cinema Packages (DCPs). When used with IMAX-specific content, special control metadata in the IMAX package automatically enables the enhanced and unique aspects of the IMAX format, pushing the performance up to the IMAX standards.

#### TWIN PROJECTORS – 2K OR 4K?

IMAX Digital currently uses two Christie-manufactured DLP Cinema projectors, although the company plans to remain technology and



vendor agnostic to allow progressive improvements as new technologies and products become available. The two projectors are used in a unique configuration: The two images are pre-processed and projected superimposed on each other in a clever way that is claimed to increase the image's fidelity and quality.

The DCP (Digital Cinema package – the set of files that result from the DC encoding, encryption and packaging process) that the cinemas receive is described as a standard 4K DCP, but the way in which the images from the two projectors overlap means that they certainly won't have the same pixel density as those from a 'conventional' 4K digital cinema projector. The IMAX idea is to use a technique that they call super-resolution, whereby the data from the 4K

DCP is split into two parts, with each part being sent separately to one of the two projectors. I gather that the pixels of each projector are offset about half a pixel width when they land on the screen, which means that the resulting image is greater than 2K, but less than 4K – some estimates are that a super-resolution image of this type could equate to picture resolutions as high as about 2.9K.

IMAX thus makes the reasonable claim that its 'proprietary image enhancer' enhances the picture fidelity over standard 2K movies, and it is understandably keen to ensure that it retains exclusive control over this aspect of its kit. No doubt we will learn more about this equipment in the future.

The system appears to be technically DCI compliant, and there seems no reason why the projectors couldn't be used without the IMAX image enhancer to show a standard 2K DCP, but there may well be marketing reasons why IMAX wouldn't want this to happen, as showing ordinary 2K digital in the IMAX Digital venues might be thought to dilute the IMAX Digital Experience.

The light levels are set to 22 Foot Lamberts for 2D, significantly brighter than the 14-16 FL used in conventional auditoriums.

The projectors are fitted with special IMAX-developed lenses that are specifically designed to complement the IMAX multiplex theatre's geometry. IMAX has developed a proprietary closed-loop alignment system using a camera that will automatically keep the projectors precisely aligned and balanced.

When used for 3D, Imax Digital uses both projectors to continuously overlay the left and right eye images, a totally different technique from





the rapid time-sequential triple-flashing that is often used in single-projector solutions. IMAX digital 3D uses polarised passive glasses and does require a special proprietary silver screen.

#### THE DIGITAL SERVER

It is not surprising that this clever combination of two 2K projectors requires feeding with a specially modified stream of digital data, and Doremi have configured special digital server arrangements to provide what is required. Patrick Zucchetta of Doremi tells us that the IMAX installations will each use one DCP2000 player (initially the Silver 3RU, but the new 2K4 will also become applicable starting in January 2009) with two of their MB-4K media blocks. The output of the Doremi media block is then connected to the IMAX Image enhancer. Reminding us that the IMAX system is designed to be 'projector agnostic', Patrick says that in installations which will use Sony 4K projectors, two Doremi media blocks and two Doremi LVDS converter boxes will be required.

#### FORTHCOMING MOVIES

IMAX Digital, like the film version, has been designed as a complete end-to-end system, where each element, process and piece of equipment has been designed and optimized

to deliver the large-screen IMAX experience. It is understood that Imax has been talking to various major studios about film projects for the coming year, but IMAX movies will be released in both film and digital formats for the foreseeable future.

#### FINANCIAL ARRANGEMENTS

As usual, you can't get those involved to discuss the finances involved, but it is thought that most installations, including the Odeon UK ones, will be joint ventures between Imax, which puts in the investment to cover the projection equipment and screen, with its installation, and the cinema owner, who stands the substantial cost of retrofitting (partially rebuilding) the cinema auditorium. Presumably the box office takings will be split on a negotiated basis. An alternative financial scenario would be for the cinema to buy the complete system from IMAX (could be getting on for £1 million, according to some sources) and then pay a smaller percentage of the box-office takings, but this sounds less likely in these days when sources of finance are proving difficult to tap.

#### THE COMPLETE IMAX DIGITAL SYSTEM

It is interesting to read what IMAX have told us about their system and about their claims for its superiority over other existing systems:

**The IMAX Digital theatre system** uses a comprehensive suite of proprietary IMAX technologies, that, when integrated together, creates an experience that consistently puts the audience IN the movie.

These technologies include:

##### IMAX Image Enhancer

- IMAX's proprietary image enhancer brightens the on-screen image, and, through the use of a camera that provides real-time, on-screen feedback, it makes automated adjustments to ensure maximum image fidelity is maintained 100% of the time.

##### IMAX Theatre Geometry

- IMAX's patented theatre geometry puts each member of the audience IN the movie – and is a key reason why IMAX® 3D is the most immersive cinematic 3D ever created.

##### IMAX Sound

- IMAX's Proportional Point Source loud-speaker technology enables listeners to pinpoint the specific location of a sound – with five discrete audio channels. (conventional 5.1 disperses sound through many speakers making it nearly impossible to locate the origin of the sound)
- Each IMAX theatre is acoustically treated to present accurate and realistic sound images with the largest dynamic range. This enables the sound to be crisp enough to hear a pin drop and precise enough to know exactly where it dropped.

- Each film's soundtrack is specially mastered for IMAX's unique sound system.

##### IMAX Screen

- IMAX's proprietary high-gain screen results in exceptionally bright images and unparalleled 3D
- The IMAX screen is slightly curved, sits closer to the audience and typically spans from wall to wall and floor to ceiling.

##### Dual Digital Projectors

- The IMAX Digital system is "projector agnostic," meaning that it can utilize commercially available digital technology that best meets IMAX requirements – the projectors are merely a vehicle for IMAX's proprietary image enhancer, which turbo charges the basic functionality of the light engine.
- One of the key benefits of being projector agnostic is that IMAX can adapt and even improve as suppliers develop new technologies.
- The current system uses two 2k Christie projectors and has a 1.9:1 aspect ratio – in keeping with the best-tested chip sets – and we continue to work with dual Sony 4k projectors.

##### IMAX DMR®

- All film content that is played through IMAX's digital projection system is digitally re-mastered with IMAX DMR technology.
- IMAX DMR employs a suite of proprietary image enhancement tools that optimize each image for IMAX presentation. Some of the techniques used to enhance the digital image include sharpening, color correction, contrast and digital artifact removal.

We manipulate the theatre geometry and the source material (the images and sound of the movie), enhance the server, use multiple projectors and incorporate automated diagnostic tools that tweak sound and picture to maintain consistency of presentation. We have customized lens suites to maximize image fidelity in our theatre geometry, and the IMAX image enhancer precisely layers image on image with sub-pixel accuracy.

##### How IMAX Digital compares to other digital systems?

We believe that IMAX Digital is the world's most advanced digital theatre system and is superior to all conventional digital systems, just as IMAX's film-based system is superior to conventional film-based systems.

- Digital IMAX 3D is 250% brighter than conventional single projection digital 3D (@70ft)
- Twice as many addressable pixels (compared to other DLP Cinema-based systems), which dramatically sharpens images.
- IMAX's proprietary image enhancer





Top - A new IMAX Digital auditorium in the US which gives an idea of how the Odeon screens in Greenwich and Wimbledon will look when they are completed".

Bottom Odeon's new Imax branding - right: The Odeon Wimbledon and left The Odeon Greenwich.

increases brightness and image fidelity (fidelity is the degree to which the image is accurately reproduced). As the images originate in the form of data, it is essential that they are reproduced into vivid on-screen images that meet IMAX's high standards.

- The image enhancer uses more than 1 teraflop of graphics processing power, equivalent to more than 100 desktop computers. No other digital projection system in the world employs this much processing power.

- The proprietary dual projection system projects left- and right-eye images simultaneously – conventional single projector systems alternate between eyes, causing depth distortion during fast-moving scenes.

- We extend the bandwidth (data flow) up to 60% to further reduce compression-related visual flaws.

- Unparalleled digital surround sound – conventional theatres use standard non-discrete 5.1 surround. IMAX's system features five "discrete" channels and sub loudspeaker technology. Discrete sound technology enables sounds to be accurately placed in specific areas of the theatre to create a more realistic and immersive environment.

- IMAX's DSP-based audio enhancer will perform customized calibrations for every show.

#### IMAX, BUT NOT AS WE KNOW IT!

Since it seems that the system has been designed primarily to

show IMAX DMR format movies, it is obvious that the results from the IMAX Digital system will be different from those of the IMAX 15/70 film system. A major change will be the change of aspect ratio from the traditional 'full-height' 1.33 ratio of 15/70 to the 1.78 of the DMR system, which will match most movies well but will certainly reduce the vertical field of view.

Dyed in the wool IMAX enthusiasts may initially complain that Digital IMAX isn't 'the real thing', but many of those who have experienced the new system are generally delighted with the new IMAX experience and love the high quality images and sound which have significantly more impact than a visit to the standard multiplex auditorium next door.

The two new Odeon IMAX Digital screens will be the first in Europe, and the current plans are for a launch on December 5th with Madagascar - Escape 2 Africa. A week later The Day the Earth Stood Still should open, and the cinemas are expected to run a split programme running up to Christmas.

Although I mused earlier that the projectors can also be used for 2K non-IMAX films and alternative content, Odeon have planned a fantastic IMAX film line-up for next year, so that the screens will be showing IMAX for the majority of the year.

Forthcoming IMAX Digital movies for 2009 include:

- February - Under the Sea 3-D
- March - Watchmen
- April - Monsters vs. Aliens
- May - Star Trek and Night at the Museum 2
- June - Transformers 2 (filmed using IMAX cameras)
- July - Harry Potter and the Half-blood Prince (with 40 minutes in IMAX 3-D)
- August - G. I. Joe

I hope to be able to take photographs of the installations at Greenwich and Wimbledon during late November, and to be able to provide more details of what happens in the IMAX Digital projection rooms in the March issue of Cinema Technology.

Cinema Technology readers are recommended to get out and see Digital Imax for themselves – I guarantee that you will be amazed! It may not be the same as 15/70 IMAX but the name and the fact that the experience will be different and better than you can get in the adjacent multiplex screens is likely to bring in new audiences to the cinemas concerned.

***Odeon are to be congratulated on an innovative approach to bringing The IMAX Experience to their cinemagoers, and we look forward to seeing how the box-office figures reward their considerable investment.***

Jim Slater



Denis Kelly of the Cinema Technology Committee has been taking a look at ...

# Cinema in Letchworth



Most of us assume that New Towns were a new concept, created by post war planners. The truth is that they are simply brasher, less sophisticated versions of the Garden Cities projects of the early 20<sup>th</sup> Century.

It was in 1898 that social reformer Ebenezer Howard, appalled by the unpleasant living and working conditions in most British towns, outlined his idea of "Garden Cities of Tomorrow". Letchworth Garden City, nestling in the pleasant rolling countryside of North Hertfordshire, some 40 miles north of London, is fiercely proud of its self styled title "First Garden City", from its founding in 1903. Howard envisaged a marriage of town and country aspects, with tree lined avenues, clean and healthy workplaces in dedicated sectors of the town, and a desirable environment in which to live, work and follow leisure pursuits. From its experimental birth in Letchworth, Howard's vision became over the next few decades a blueprint for similar towns in Britain, including its bigger near neighbour Welwyn, and also around the world.

## LETCHWORTH HERITAGE MUSEUM

Visiting today, there is a certain feel of quiet 1920s and 30s gentility about the leafy town. My visit was to see the summer long Special Exhibition at the local Heritage Museum entitled "Cinema in Letchworth Garden City", subtitled "Discover the local historic passion for the big screen". My first surprise was to find the Museum in a small suburban cottage style house with a thatched roof; not at all what I expected! Unfortunately Curator Josh Tidy was away on business, but the resident staff were very welcoming and helpful.

## IN THE BEGINNING

Informative panels traced the history of the three local cinemas, **The Palace**, being in 1909 the very first purpose built cinema in the whole country. The photo (centre top) comes from the book *Cinemas in Hertfordshire*, by Allen Eyles and Keith Skone, Published by Univ

The Palace



The Palace projection room



The Broadway - early 1900s



The Broadway - today



of Hertfordshire Press, ISBN 0954218906, which is recommended to anyone seeking a far more in-depth history than this article can provide. The Palace cinema was placed away from the town centre as it was considered to be a fire hazard, and indeed soon afterwards the new fire station was built right next door! It could only seat 750 patrons, and by 1924 it was closed for extension work, allowing a new cinema, **The Rendezvous**, to open up. This upstart, built from redundant army huts, lasted only a few years once the more established Palace came back to life. The boom in attendances led to a much bigger cinema, **The Broadway** (pictured centre - photos (old cinema) [www.Letchworthgc.com](http://www.Letchworthgc.com) (today's cinema) [www.industriouseast.org.uk](http://www.industriouseast.org.uk)), opening its doors in 1935, and this remains today as the local independent movie house. Its Art Deco style, built with 350,000 bricks, intricate tracery windows, having uniformed usherettes, dazzling interior designs and colouring, as well as huge red and blue external strip neon lighting, made it an instant winner with cinema goers. The Broadway was refurbished in 1996, keeping its Art Deco style, and until recently had three screens and a total seating capacity of 836.

## CHANGING TIMES

The Palace Cinema (*the projection room at The Palace in 1975 is pictured alongside, showing Kalee 21s and Peerless arcs. Photo Mawgrim/Michael Buck*) went down the Bingo Hall and live wrestling route, which hardly seem to be a good fit with the Letchworth style, and it finally closed in 1977. Perhaps it is significant that a Blockbuster Video store now occupies part of the demolished site. The Broadway, now owned by the LGC Heritage Foundation, went multi screen in the 1990s and there has been some significant refurbishment and

improvement just completed, including a fourth screen, so viability seems assured for the moment.

### CINEMA CONNECTIONS

A nice touch in the Museum exhibit area was a continuous loop of related photographs of the local cinemas accompanied by recorded reminiscences of local residents, really capturing the feel of a bygone cinema era. Apart from the history of the buildings, the collection went on to uncover some of Letchworth's unusual cinema connections. It seems Laurence Olivier came to the town in his school days, and first trod the boards in school plays. The very same school had Michael Winner as a pupil, and it was here that Winner lodged Robert Mitchum during the shooting of "The Big Sleep" in 1978. An almost-claim-to-fame is that Spirella, the local corset factory, provided the appliances for "The Prince and the Showgirl", but there is no proof that Marilyn Monroe ever needed such assistance for her figure! George Lucas was so impressed by Ogle Design, with such iconic products as the Bond Bug, Reliant Scimitar and the Popemobile in its portfolio, that he commissioned the original Landspeeder design for "Star Wars". Yes, Letchworth's contribution to the cinema is remarkably varied!

### A FAMILY SHOW

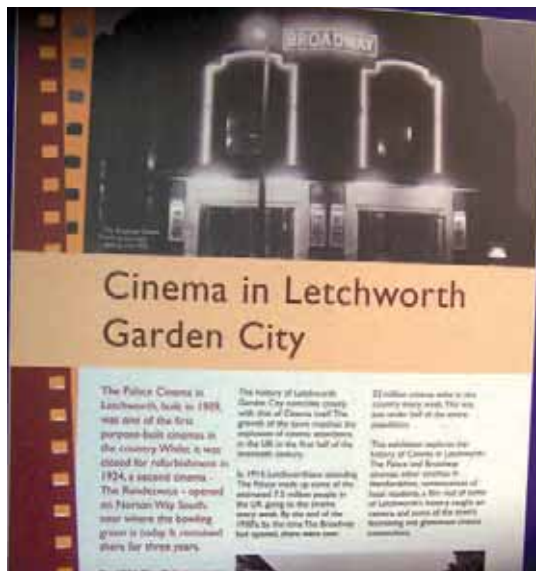
Despite the emphasis on historic cinema, there was a really impressive attempt to interest the younger members of the family, with a small area set aside near the exhibits as a Dressing Room, where children could try on different clothes, masks, wigs and so on. A desk area had crayons and movie pages to colour in, as well as a "Missing Faces" quiz. Another section had some items kindly loaned by the Cinema Museum in Kennington, London.

Very obviously the prime aim of the exhibition was to remind, in the main, local residents and not just film buffs of Letchworth's cinematic past, and how cinema has played its part in community life over the years, not least in its heyday. As a result, there was little real detail of the technical aspects of the three cinemas that have graced this model town over the last 99 years.

### COINCIDENCE?

The dedicated summer long exhibition was, I sense, neatly and cleverly timed to coincide with the opening of the extended local cinema. However, the thread that cinema drew through the social history of 20<sup>th</sup> century Britain was very plain to see, and well informed in a variety of different and interesting ways. Letchworth, First Garden City, is proud of its past and present, and of its cinema heritage in all its forms.

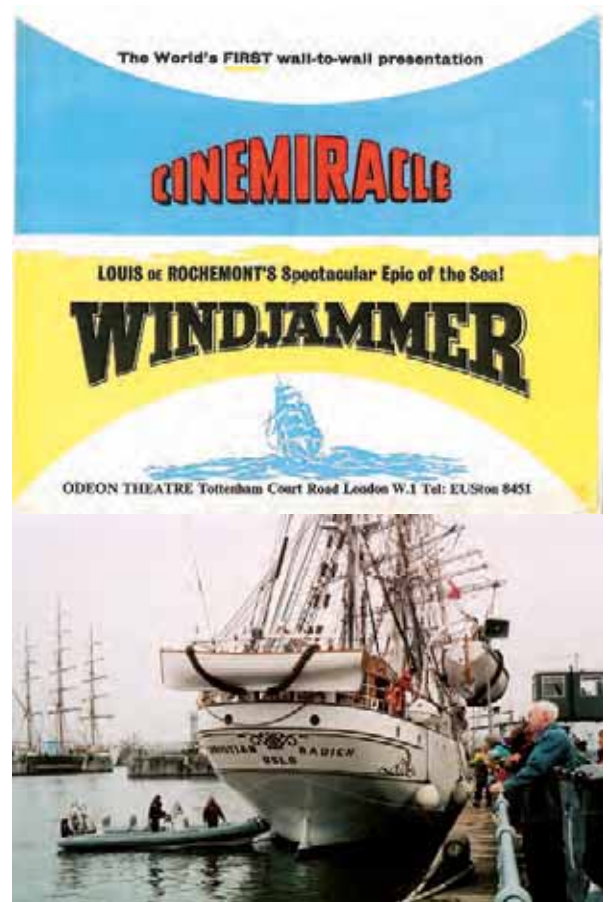
Denis Kelly



Some of the many fascinating exhibits on show at the special 'Cinema in Letchworth Garden City' exhibition which was held in the Heritage Museum from July to October. The varied displays explored the history of the town's cinemas, past and present, and its cinematic connections, people's memories of trips to the 'flea-pit' or picture palace, Letchworth on film and much more. The picture immediately above right is of the Broadway projection room with Victoria 8 and Super Zenith 450 (photo Mawgrim/Michael Buck).



The article in the last issue on the importance of showmanship when Ben-Hur was initially screened led to a number of responses telling me that this type of requirement for special care when showing new movies was by no means unusual, and many of our more mature projectionists actually learned on the job the vital part that showmanship could and should play in making going to the cinema a special event. Mike Taylor of the PPT sent some interesting 'instructions to projectionists' and even individual 'cue sheets' that were sent out by the management of National Theatres Inc., an American chain of cinemas who formed a new company called 'Cinemiracle International Inc.' to promote the Cinemiracle system, described alongside. Cinerama subsequently bought out Cinemiracle and the film Windjammer was added to the attractions of that company. It is a coincidence that the film is 50 years old this year. The star of the film is the vessel 'Christian Radich', and Mike's photo shows the ship when she was in Liverpool during July of this year to promote Liverpool's Capital of Culture 2008 and to start the Tall Ships Race 2008.



# That really was showmanship II

## INTRODUCTION TO CINEMIRACLE by Elmer C Rhoden, President National Theatres Inc.

April 1958. Los Angeles, California. Louis De Rochemont has selected a challenging epic story for the first Cinemiracle presentation. A story about boys going to sea to be trained on an old fashioned sailing ship. The Windjammer 'Christian Radich' in her conflict with the sea provides the young cadets with every variety of difficult and challenging experiences. For the first time you will experience life on board a Windjammer, and share the thrills through the eyes of Cinemiracle. It gives you a new experience in seeing motion pictures with a scope that matches the vision of the human eye. You will watch wall to wall projection and hear 7 track stereo Hi Fi sound. We at National Theatres Inc. are most happy to play a part in the continuing development of the motion picture, thereby bringing to the theatre patron a greater measure of enjoyment.

*Windjammer Cue Sheets for the projectionists - they really did have to watch the movie as well!*

### ACT 1

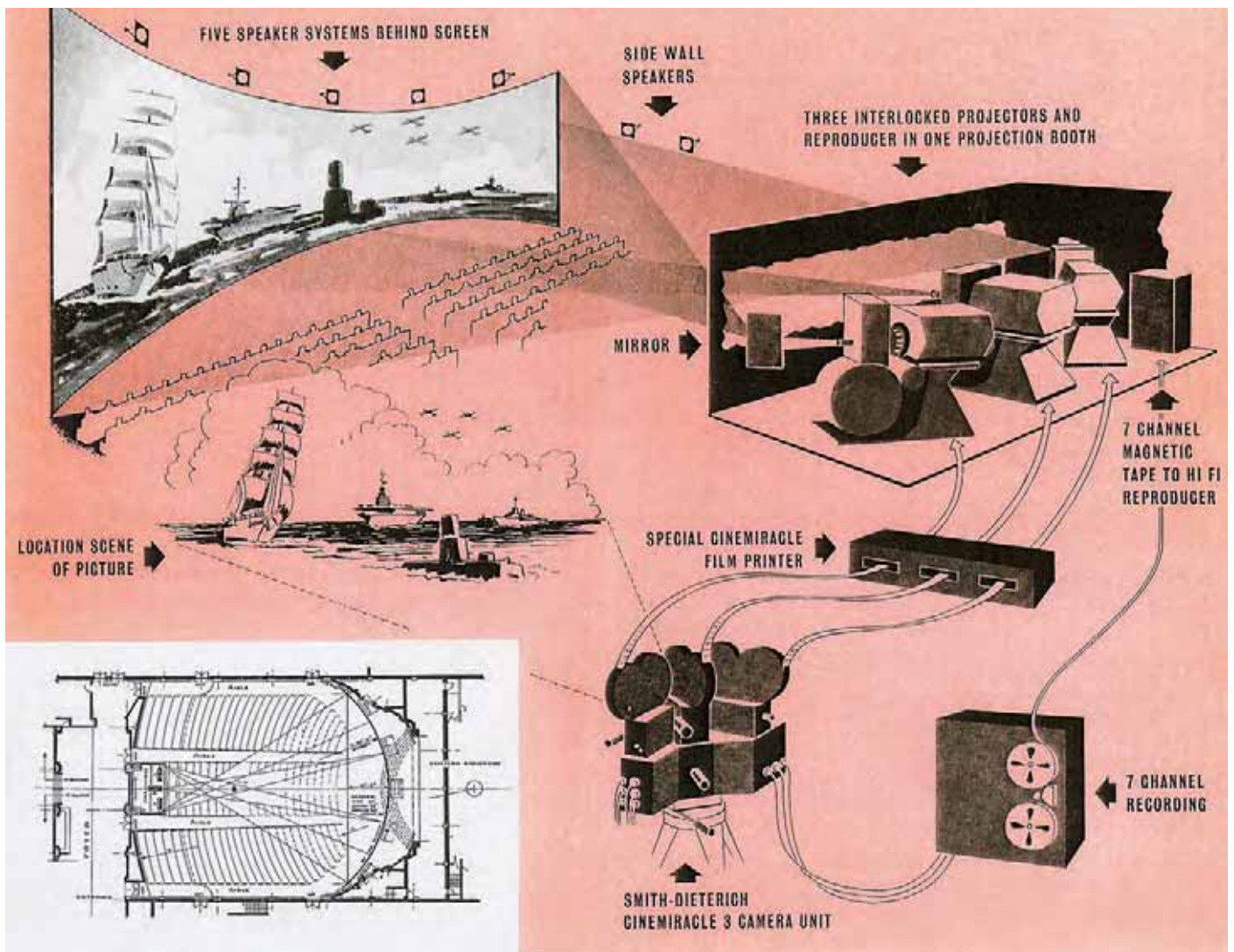
- EVERYONE - Sync up, Load up, Do NOT go into remote
- Open all sound pots on Cinerama sound console
- Start walk-in music (Cinerama sound machine). Run in LOCAL.
- End of music (516 ft) Immediately close all Cinerama sound pots and start standard 35mm prologue machine.
- While prologue is running, sound man must manually roll film past CLEAR leader to new start mark (546 ft). Be sure to be in sync, and put counter back on zero.
- EVERYONE - Into remote and lock up.
- PIX Cue: Dog looking up at boys: Take up and arcs,

- sound to open all pots on Cinerama console
- PIX cue: Barometer hanging: Stand by to start.
- PIX cue: On Deck, Sailor and Dog: (Visual cue mark) PUSH button and open dowsers
- NEXT VISUAL CUE - Open curtain to full
- AT INTERMISSION SIGN - start closing curtain
- CLOSE ALL POTS AT END OF ACT

### ACT 2

- EVERYONE - Sync up, Load up, Do NOT go into remote
- SOUND to set all pots on Cinerama sound console
- Start walk-in music (Cinerama sound machine). Run in LOCAL.

- SOUND MAN Immediately after walk-in music (300 ft) close all pots. Roll film manually past CLEAR leader to second start mark at 330 ft. Sync up and reset counter to zero.
- EVERYONE - in remote and lock up.
- TAKE UP AND ARCS
- Stand by to start - set all pots on sound console.
- Motor start 1-2-3 Open hand dowsers - pause - open sync dowsers
- WHEN PIX, HITS Open curtain full
- PIX cue: BOAT (LONG SHOT) - start closing curtain
- ALL SOUND POTS DOWN AT END OF PERFORMANCE



## INSTRUCTIONS FOR WINDJAMMER CHANGEOVER INSTALLATION

For a changeover in Windjammer it is necessary to realign A and C machines and adjust projector and screen masking. It is NOT necessary to change the water jackets and gigolos since the total width of each Windjammer A, B, C panel is less than a Cinerama picture panel.

Two adjustable lens mounts and a set of alignment loops will be supplied with the Windjammer film. The adjustable lens mounts are to be installed in A and C projectors. They are used to register the picture vertically from section to section in the same manner that you now use the framing knob for horizontal alignment. This device is also used to blend the match lines from section to section.

1. To install these units, first remove the existing lens adaptor and insert the lens in the adjustable mount. Next, lock the lens in this new adaptor with the Allen set screw which is located on the side of the barrel of the shifter.
2. Install the complete assemblies in A and C machines. Be sure that the lens shifting adjustment knob is at the center of travel.
3. Project A and B target films together. Before attempting to line up the projectors be sure that the gigolo teeth are centered. They must be clear of the light black vertical line near the edge of each panel. These lines must be superimposed. The color blocks are then matched for correct magnification.
4. Repeat the above using B and C projectors.
5. Remove the target film. Project the picture print to be used and make final adjustments using the lens shifting devices.

NOTE: The A and C panels of the Windjammer are mirror images and are 'flopped' in the gate so that the emulsion is towards the lens. No changes are necessary on the sound equipment for Windjammer.

# For your diary... Events

### 9-11 December CineAsia 2008

Wynn Macau, Macau, China  
[www.cineasia.com](http://www.cineasia.com)

### 30 March - April 2 ShowWest 2009

Ballys and Paris Hotels, Las Vegas, U.S.A.  
[www.showest.com](http://www.showest.com)

### 17-23 April NAB 2009

Convention Centre/Hilton Hotel, Las Vegas, USA  
[www.nabshow.com](http://www.nabshow.com)

### 22-25 June CineExpo 2009

RAI Convention Centre, Amsterdam, The Netherlands  
[www.cinemaexpo.com](http://www.cinemaexpo.com)



# Colour technology for digital cinema and the digital intermediate

**A two day workshop held at MPC and presented by Charles Poynton attracted over 40 delegates - including several from overseas.**

*Report by Peter Swinson FBKS.*



Charles Poynton is a recognised expert in the field of colour science and mathematics, especially in the fields of TV and Digital imaging.

**B**KSTS President Roland Brown introduced Charles Poynton and proceedings were quickly underway with the audience being issued with a quiz sheet. We were asked to answer all questions and at the first break Charles would check our answers.

He intimated that anyone who answered all correctly would not be allowed to stay! No-one was asked to leave after this break and the answers allowed Charles to aim the two day proceedings at a known audience knowledge level. (The quiz sheet is printed at the end of this article, try it for yourself. You have to answer the questions in less than 15 minutes. *The answers to these questions can be found on page 62).*

To understand where we were being taken in the world of digital imaging Charles emphasised that there are two main activities to be considered in handling image data, if the information is to remain controlled. The creative colour control, by those involved in the artistry of making the images, and the absolute colour control maintained by the non artistic operations.

Charles was concerned that too often the image is "adjusted" intentionally or unintentionally by those who have not been part of the original creative decisions. Such "adjustments" include not only those made during the workflow of projects but, as he pointed out, by manufacturers of domestic TV sets who claim to offer systems that can improve on the original image!

Charles liked to have, what he calls "minor rants" often originating from observations of some of the crazy decisions made within our industry. Of these he returned on several occasions to the fact that the HD standard known as RP709 which embraces defined colour and grey scale capture levels in cameras does not cover TV receivers. Indeed he observed that for over 40 years there has been no international standard that defines the colour accuracy displayed on TVs for any particular incoming signal.

Charles covered the subjects of contrast handling, resolution relative to viewing distances, image aspect ratios and the evolving quality from HD, through 2K to U-HDTV of around 8K.

Digital sensor structures were described, with explanations of the difference between HD cameras using 3 sensors with beam splitter prisms compared to single RGB Bayer masked sensors. Pros and cons of each were discussed with some lively questions and comments from the audience

Current display technologies, covering LCD,

FED, SED, OLED, Plasma and DLP were described and some of their characteristics discussed. From several comments during this discussion, it appears the CRT display is yet to be bettered, at least in the professional environment. Indeed it was hinted that some post companies have stock piled spare CRTs so they can extend the life of their present monitors.

The sometimes puzzling subject of linear vs logarithmic digital coding was covered in detail, with explanations that the subject has four rather than two variants!

During the two days, Charles covered in considerable detail many of the topics involved in generating digital information representing imagery, he also explained the mathematics and reasoning behind subjects such as R,G,B, Y,Cr,Cb, LAB colour space and others, explaining how they offer particular colour gamuts, he further explained their constraints and why each is used in its particular environment.

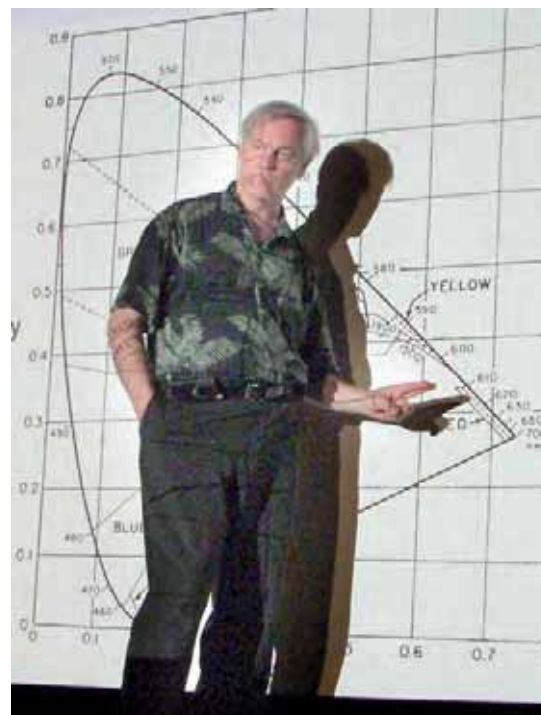
Charles gave impressive demonstrations of ad-

ditive Red, Green and Blue colour mixing and subtractive Cyan, Magenta and Yellow mixing. He also showed how overall colour temperatures influenced images and where different colour standards resided within the CIE chart.

One point became very clear. When we judge colour and density, and relate it to physical numbers or percentages, we need to understand that we do not perceive shades linearly. Time and time again Charles demonstrated this fact. Indeed it is because our visual system is non linear that we can observe imagery with less data than we would at first believe.

The workshop was very informative and during lunch after each days proceedings, Charles Poynton could be found discussing the issues in greater detail with groups at the bar! A number of the event sponsors were on hand to demonstrate their products.

The Workshop was organised by BKSTS and sponsored by the companies shown below.



GALAXY LIGHT & POWER

## The Quiz

Copyright 2008. Charles Poynton

- Q 1**  
Express decimal 31 in binary
- Q 2**  
..... in hexadecimal (base 16, using 0 – f)
- Q 3**  
What Red, Green and Blue values in Photoshop represent white?
- Q 4**  
Your camera is set to an aperture of f/5.6- where do you set the aperture to cut the exposure to one-quarter?
- Q 5**  
What is the correlated colour temperature of tungsten illumination?
- Q 6**  
What is the base-10 logarithm of 0.1?
- Q 7**  
What is the base-10 logarithm of 1000?
- Q 8**  
How many bits in a byte?
- Q 9**  
What's the typical peak luminance of a consumer television receiver in  $\text{cd/m}^2$ ?
- Q 10**  
What's the circumference of a circle whose diameter is  $\frac{7}{11}$ ?
- Q 11**  
What's the duration of a scan line in conventional 576/25 video?
- Q 12**  
What  $D_{\text{MAX}}$  is typical of a good (but not great) black & white photographic print on paper?
- Q 13**  
What are the prime factors of 102?
- Q 14**  
What's the reflectance of a Kodak "mid grey" test card?
- Q 15**  
What's the typical exposure time of 35mm motion picture film?

ANSWERS ARE ON PAGE 62

# Beyond HD

## Can cinema keep up?

Jim Slater warns that the cinema industry mustn't be complacent about the new technologies being tested by the television industry but reckons that cinemas can use 'showmanship' as their secret weapon to keep their audiences

In the IBC report I mentioned the superb images that the still experimental Super Hi-Vision television system was able to project on to a huge (for TV) 6 metre screen, and the demo set me thinking of the potential effects on the cinema exhibition business if this system should eventually become available to the mass audience. To those of you who think it unlikely, I would remind you that many who saw the original HDTV images that were shown on a large screen in a marquee on Brighton beach a quarter of a century ago regarded HDTV in the home as unnecessary and equally unlikely - how could you possibly cope with big screens in the home? Now most people who buy a new TV take care to see that it is at least 'HD-Ready', and millions are watching true HD programmes via satellite and cable, with promises of 'off-air' HD programmes in the next few years.

### THE ONGOING COMPETITION

The history of the cinema exhibition business has been one of competition with television ever since TV gained mass-market appeal. In black and white TV days there could be no real competition, but

once colour TV arrived the cinema business found itself in trouble as people chose to stay at home to watch their movies. The cinema business fought back successfully by introducing widescreen pictures in many different formats and sound systems that even the keenest of hi-fi fans couldn't hope to compete with in the home. TV then retaliated with stereo sound and so-called widescreen (16:9), which had some effect, but for the last decade the cinema industry realised the importance of luxurious surroundings and high presentation standards in making going to the cinema a special event. The coming of DVDs meant that the quality of movies in the home could be top-class once again, and some of the potential cinema audience decided that it actually preferred to watch movies at home, especially when some cinema showings are spoiled by the inconsiderate behaviour of others in the audience. For a long time cinema retained the huge advantage of being able to launch 'blockbusters' that wouldn't be available via other sources for many months, but in recent years the 'window' between exhibition release and DVD release has shortened, so that people now

know that if they can resist the temptation of going to the cinema for the publicity-hyped first showings they will be able to watch the same movie on DVD for a tenner within a matter of weeks.

### DIGITAL CINEMA - THE FIGHT BACK

Digital Cinema was intended to be a powerful weapon in the exhibition industry's armour, providing uncompressed multi-channel sound and images of a consistently high quality even months after a movie's initial release. After much wrangling the industry came together to agree technical standards, but the large scale rollout has been restricted by an inability to create a universally-accepted business plan. How does an industry that was used to purchasing projection kit that lasted almost indefinitely come to terms with replacing this with equipment costing three times as much and which has an uncertain lifetime? The 'how long does a digital projector last?' argument isn't, it turns out, the most important question. There is a general feeling, based on the experience of digital projector manufacturers over the last decade, that there is no reason why a digital

cinema projector shouldn't still be producing first class results in ten years time, which should allow the financial guys to amortise the investment over a reasonable period and base their plans on that. BUT, and it is a big but, once our industry goes down the digital route it is in grave danger of following the computer model, in which there is always a higher-spec better performance model just around the corner. In 2008 much of our industry has accepted that the 2K Digital Cinema standard is the one to invest in (and, certainly, the pictures are more than adequate for any movies that I have seen) but there is the real background worry that the 4K equipment that is currently being offered might prove to have a significant competitive advantage in marketing terms, even though the kit costs significantly more to buy at the present - its price will probably come down somewhat if you wait.

### MAKING THE INVESTMENT, TAKING THE RISK

So just suppose a cinema chain invests many millions in 2K or even 4K equipment, hoping to be 'future-proof'. Then, a few years down the track the TV companies

BBC R&I and NHK STRL

Beyond HD

Demonstration on a  
6-metre wide screen

Free tickets available\*

Sensation of Realism

Super Hi-Vision  
Ultra-High Definition Television  
4000 lines by 8000 pixel pictures,  
22.2 channel '3D' surround sound  
Better resolution than 4K  
Digital Cinema.  
Developed by NHK Science  
and Technical Research Labs  
in Japan

Dirac SHV  
Dirac open source code-  
making Super Hi-Vision  
broadcasting practical.  
Developed by  
BBC Research and Innovation

\*Contact: Tina Healy, BBC R&I, Kingswood Warren  
(tina.healy@bbc.co.uk; Tel: 01 39640)

The Think Tank, Media Centre, W12  
1st-3rd October

10am-4pm  
Complimentary seats  
on the floor  
15 minute duration

BBC Research & Innovation

NHK STRL



come up with 8K Super Hi-Vision for the home, on large flat screens for the home that use new display technologies like OLEDs, which can be made any size you like on rolls of material, or even using tiny ceiling mounted projectors that are bright and sharp enough to watch in daylight.

Imagine the TV marketers' delight at being able to claim pictures that are 16 times HD, with nearly four times as many pixels per line and four times as many lines as a 2K cinema showing. Could cinema compete? Should cinema even try to compete on these strictly technical parameters? How on earth do you come up with a business plan that copes with the need to change equipment standards every few years?

#### FINDING THE FINANCE

It is not impossible. Look at the car industry. Every year it comes up with new models and improved specifications, with enough new goodies

to make you want to change your perfectly satisfactory motor car for the latest model with the latest gizmos. In recent years I have gone from four gears to five gears and now have six, but my car hasn't got the TV cameras in the bumpers to help with parking, and its cruise control doesn't alter the speed to take account of the car in front, whereas the latest Nissans do, and I will be looking out for such things when the time comes to change. The car industry has kept this culture of change going by working with the finance people to ensure that part-exchange makes it very easy to change your car every few years, and some of the three-year leasing deals mean that you don't even have to borrow the whole cost of the vehicle, merely the projected difference in price between the new model and what it is likely to be worth in three years time. So financial models to suit a digital cinema industry with the need for new kit every few years shouldn't be impos-

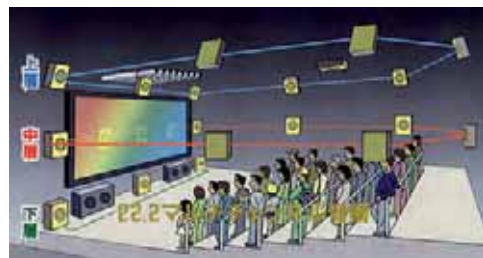
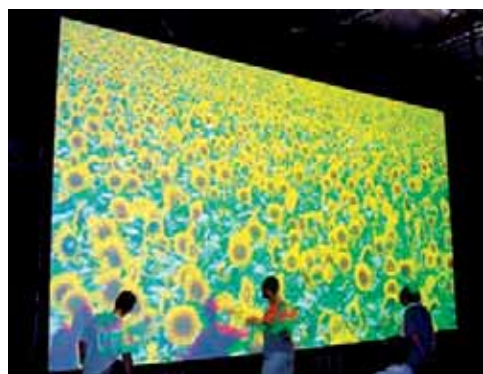
sible, although I am conscious that writing about anything financial at this time when the world's markets are in turmoil could be considered foolhardy.

#### PLAY TO YOUR STRENGTHS

Whatever the chosen technologies, and these are likely to change with increasing rapidity, the cinema exhibition business must not sit on its hands, rest on its laurels or simply be satisfied with 2K or even 4K - whatever it takes to keep new generations of people coming to the cinema our business investors must be willing to provide. History has shown that the cinema cannot afford to be left behind in a technological race where the competition from television will become tougher and tougher. As well as keeping up with whatever technological demands the business requires, the cinema exhibition industry can and must make use of the experience and strengths it has developed over the last hundred

years. First and foremost we need to provide movies that people really want to see, and to use our marketing skills to ensure that they know about these and are desperate to get out and see them before their friends do. Provide your customers with luxurious and comfortable surroundings in which they are proud to be seen. Use showmanship to ensure that they not only see brilliant images with superb surround sound, but that they experience the thrill of attending a special event (every show) in the company of others. Make going to the cinema a real treat. Already many of the big chains and the smaller art-house circuits are taking the route of ensuring that going to see a movie is a really special experience, and it is that ideal, rather than any new technology, that will ensure the future success of cinema as we know it.

*Jim Slater*



# 'WOW' ... Super Hi-vision

## through another pair of eyes

CTC member Peter J. Knight, a part-time projectionist who works for the BBC in an IT role, had the opportunity to watch a different demonstration of Super Hi-vision from the one that I had seen at IBC, and I thought it would be interesting to get his independent opinion.

"Well I saw the demo last week and all I can say is wow! It was the same kit that had been taken to IBC and had stopped off at work on the way back to Japan. The room it was all setup in wasn't really designed for being a theatre, but despite that it was a very impressive demonstration. I was sitting right in the middle of the very front of the room and could find very little wrong with the picture, despite really trying. There appeared to be some flare off of the whites, and some ghosting as a result of the requirement to use 2 x 4K JVC projectors, but you really had to look for those areas. One of the first images I saw was a field of sunflowers and you could almost feel

the breeze as you watched them. The closeup shots of the hive of honey bees really was just like going to my father's hives at home.

Apart from asking some questions around why they had one projector which was green and the other pink, along with the spec the question was also asked about whether 16K could be achieved. The response was that this was for the domestic market so it was unlikely to happen because of costs and the limits around the equipment, but it was quite conceivable that it would be possible to see such a technology in the cinema.

The 22.2 channels of sound also produced

amazing results, although at our demo sadly it probably wasn't demonstrated to the degree which would have shown it off to the fullest effect. It would also be interesting to see this demonstration in conjunction with the surround television demo which I saw earlier in the year!

It was interesting to hear a large number of discussions and comments about the demonstration from colleagues right across the organisation, often from people who aren't that 'technical'.

This demonstration should certainly be a wake up call to the cinema industry".

# Have cinema ...will travel!



Mark Trompeteler talks with Geoff Bissex, a former quarry owner, who decided to take up his personal passion for cinema and start a mobile cinema business, Filmair, which is going from strength to strength.

Perhaps in less enlightened and less dangerous times for children, once a year as quite a young lad I awoke at about 5 am to go and watch a spectacle of magic at nearby Clapham Common. On this yearly special occasion my mother would prepare me a pack of sandwiches, and together with a few other young street friends – we would take a very early morning short walk – and take our seats on the edge of large piece of deserted scrubland at about 6 am. Over the next six hours we would watch huge lorries arrive, gangs of men jump out of vans and lorries, and an incredible amount of well organized work take place and even real elephants appear before our very eyes! In the space of a morning that piece of scrubland had become a teeming little metropolis of colourful and spectacular entertainment – the circus had come to town!

Ever since then I have also had a fond admiration and respect towards the people who can turn up in lorries and vans and in a matter of hours convert a public square, an open field, a natural or man made dip in the ground into

a modern cinema. One day this last summer I came across such a man-made dip in the ground, “The Scoop” just by London’s Tower Bridge, and outside the Greater London Assembly building, and saw that it had been converted to a wonderfully sited open air cinema.

Geoff Bissex, the man responsible, took time out to talk to me about his mobile cinema business, Filmair.

**Mark:** Geoff, I wonder if you could tell us about your original involvement / previous experience with the film industry / film exhibition prior to Filmair?

**Geoff:** It all started in 1962 when a friend who worked part time as a projectionist at The Grand Cinema in Frome, Somerset, took me to see the box one night. I had always been intrigued about what went on behind those little windows and this was the perfect way to find out. Well it goes without saying I was hooked from that night and finished up working there part time (unpaid) for three years. It was a pair of Kalee 12s with BTH carbon arcs, so I learned the hard way, so to speak. Leading on from that



I bought a pair of 16mm Bell & Howells and started doing shows around the village halls. This I did right up to the mid 1980s, when cinema took a down turn. From 1966 until 1999 my business was quarrying, during that time I owned a small limestone quarry in the Mendip Hills, Somerset.

**Mark:** What were the circumstances and developments leading up to you creating Filmair as a business / company?

**Geoff:** When I sold the quarry in 1999, having been in business all my life, there was no way I could sit still, so my two main interests were film and flying. I had gained my private pilots licence in 1975 and my commercial pilots licence in 1991. I thought I could combine the two interests. I bought a twin engined aircraft in 1999 (which I still have and fly today) and thought I could operate it professionally, and I thought I would also restart the mobile film shows, but this time with 35mm, hence the name Filmair. It took me two years experimenting and building equipment. Eventually I abandoned all “portable” projectors because I was not happy with the quality of both picture and



sound and had concerns with regard reliability. I finished up with one highly modernized Kalee 21, two Cinemeccanica Victoria 8s and three Victoria 4s all customized for mobile operation.

**Mark:** What are your principal areas of activity?

**Geoff:** Mainly the south of England, but I have worked East Anglia, The North including, Leeds, Nottingham, Birmingham and so on, and Glasgow and Edinburgh in Scotland. I am also doing my second year doing outdoor screening for the Isle of Man Film Commission in Douglas on the Island. Quite a lot of venues in and around London, and next year will be my fifth year doing the June Film Festival at the Scoop Amphitheatre, next to City Hall in London for More London Estates.

**Mark:** How do you market Filmair?

**Geoff:** Just on the web, word of mouth and repeat business.

**Mark:** Can you give us an idea as to the type of bookings you do – regular annual ones and occasional ones? What kind of clients do you have?

**Geoff:** Right across the board, regular ones, occasional and regular annual. Private individuals, Councils, The National Trust, English Heritage, Charitable Organizations, Festival Organisers, - this week I am off to do the Global Gathering Festival for the third year for Angel Music Group.

**Mark:** How long has Filmair been going?

**Geoff:** As I said previously, experimental work with various projectors started in 1999 and the first shows were in 2001. The 16mm shows in the early days, 1962 to 1986, were when I used my own name.

**Mark:** Is Filmair your only sole business or do you engage in other professional film activities too?

**Geoff:** No, no other activities.

**Mark:** Is the business seasonal and if so how do you cope with possible fallow periods?

**Geoff:** The thing to remember here is that it is really a hobby that has very much snowballed and turned into a business, so any fallow periods I use for building or updating equipment.

**Mark:** Are you happy with the state of the business? What do you think the future holds for a business such as yours?

**Geoff:** Looking at the number of new enquiries I am getting, together with repeat bookings and the numerous compliments I get from satisfied customers, I think the future looks good.

**Mark:** Why is it do you think that there has been a growing interest in special event and outdoor film screenings and how do you see this developing either positively or negatively over the next few years?

**Geoff:** I believe it is simply because it's something different and unique. The outdoor

cinematic experience is still something fairly new to England.

**Mark:** How many mobile units do you have and what equipment is on board?

**Geoff:** Two purpose built trailers (mobile projection rooms). One is equipped with a Cinemeccanica Victoria 8 with a Strong Ultra 80 lamphouse with a 7 kilowatt lamp, this is used with my 60 feet wide screen either for a Drive-In where the sound is transmitted on FM for car radio reception or I have a 20,000 watt sound system for a walk-in audience of up to 4,000.

The second unit has either another Victoria 8 or a highly adapted Kalee 21 with an ISC curved gate and analog reader. The second unit uses either a 35 ft wide X 15ft scope screen or a 25ft X 19'10" Academy Screen which is electrically raised and attached to the side of a lorry, this has a 3 kilowatt Kinoton lamphouse, both units have digital sound using the Dolby CP500 system.

A further three units are used for a variety of indoor events, all three are Cinemeccanica Victoria 4 machines highly customized for mobile use.

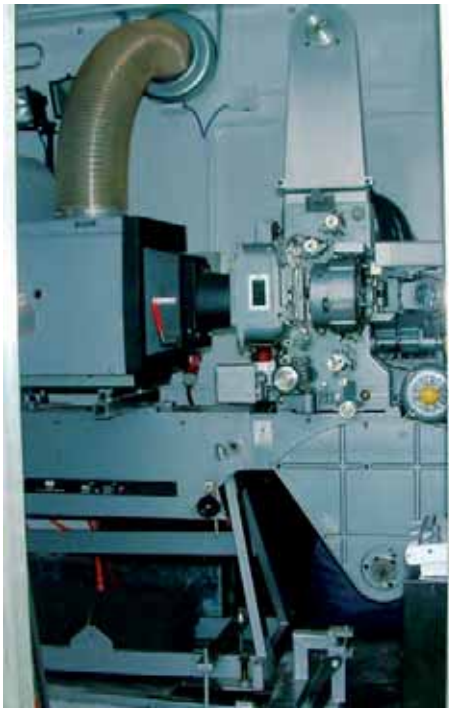
**Mark:** What vehicles do you use for each mobile unit – any special adaptations? Were the vehicles specifically built?

**Geoff:** I have one DAF 7.5 ton box van that carries the sound systems and / or screens (this is the vehicle the two smaller screens attach to). I have one LDV box van for other uses. Two mobile projection rooms, one further box trailer, and a flat bed trailer to carry the big screen frame.

**Mark:** How do you cope with safety issues, heat and extraction, the size of towers etc in such particularly confined spaces?

**Geoff:** Health and Safety is a big issue these





days, but with experience we have learned what inspectors expect of us. We always prepare risk assessment forms, equipment lists, all portable equipment is PAT tested etc. We use towers for long play, simply because we don't have the space for platters

**Mark:** How do you cope with technical equipment being driven around and being subjected to speed bumps, pot holes, steep inclines, motorway speeds etc. the mechanical stress of the roads?

**Geoff:** Everything I have, I have built myself with all this in mind.

**Mark:** What level of spares do you carry with you?

**Geoff:** We try to duplicate as much as possible,

like carrying spares, back up sound systems, spare amplifiers, spare rectifiers, lamps and mirrors and so on.

**Mark:** What level of crew do you need to staff gigs?

**Geoff:** Two for most gigs, 3 or 4 for Drive-Ins

**Mark:** What is your son's involvement in the business?

**Geoff:** Nick is part time at the moment, but he enjoys the challenges of mobile cinema as much as I do, so he will take over from me at some time.

**Mark:** What are the particular challenges of sound in the open air? You cope with digital surround sound – what systems do you use - how does it perform outdoors?

**Geoff:** The first thing you realize is you need ten times the power outside. Good analogue SR or digital outside sounds fantastic, I get more compliments about my sound than anything else. I use a JBL triple bandpass bass cabinet for bass, double 15" bass and mid range cabinets with JBL high frequency horns, all driven by Crown amplifiers, I also use JBL active crossovers. All my projectors are fitted with ICS red readers which I believe are a cut above the rest, which gives me particularly good analogue. I think most of the general public would not notice the difference between good SR and digital, other than the surround left and right separation with digital. When we have digital tracks we always run them, and with no acoustics it sounds fantastic. For audiences of up to 2000 we will set up surround sound speakers, but anything above that we don't because of delay problems.

**Mark:** What about the level of screen brightness – what kind of things do you do to cope with this?

**Geoff:** We try to go above industry standards because there are other issues outside. Unlike the cinema which is always dark, we have to cope with ambient light, and time restraints sometimes mean we have to start before it's dark enough, so we tend to use lamp power 30 or 40% above what would be used for a comparable screen size indoors.

**Mark:** How do you find digital projection compares to film projection in the open air with the kit you use?

**Geoff:** We do not at present use D cinema outdoors simply because of cost. To justify the cost of such equipment one needs to run several shows daily, 7 days a week, which in the mobile environment you cannot.

We do however have digital projectors on board alongside the film projectors that are 5,000 and 10,000 lumen Christies that are used in the main for advertising and promotional work, usually prior to the start of the movie.

I have just very recently bought another digital projector - it's a 9,500 lumen "Digital Projection" Lightning with a 3 DLP HD chip set – I have barely had a chance to put it through its paces - my very first impressions are that it is a super piece of kit.

**Mark:** What do you think the impact of digital projection may have on your business?

**Geoff:** We will continue with film for large screen presentation, I don't believe it will have any real effect for 10 years or so. Digital projection does mean that more films will be available, and for that reason I will progressively update equipment.

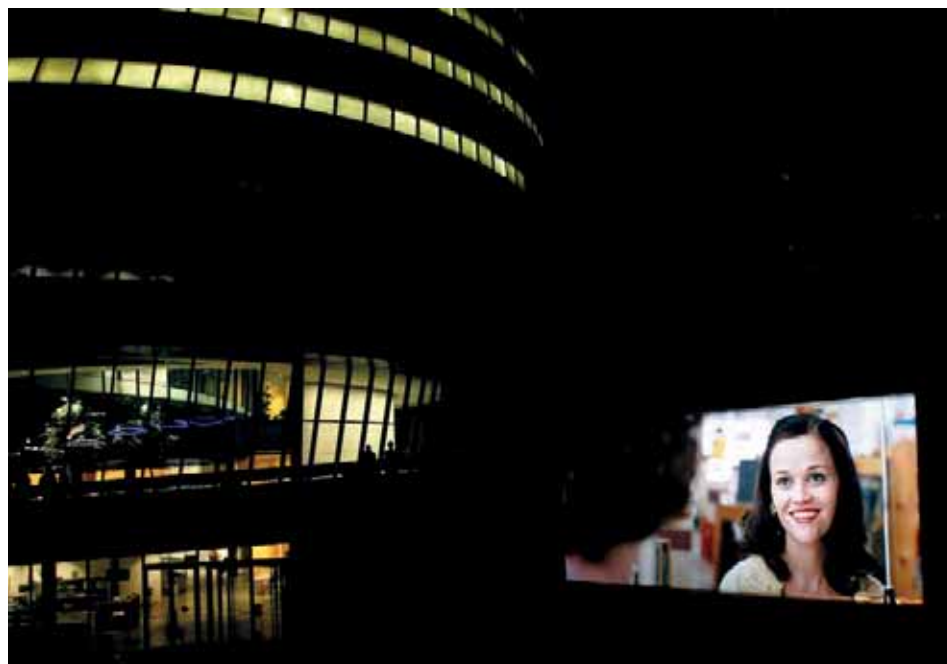
Geoff sources his client's choice of films through a booking agent and the audiences to which he presents vary so much that this is equally reflected in the very wide variety of films he presents.

Towards the end of our conversation Geoff told me that he feels very privileged to be engaged in an occupation that he loves. For him every gig he completes is a treasured memory. For quite a few audiences who saw films beautifully projected right by the iconic landmark of London's Tower Bridge – the experience must have been memorable too.

**The good news is, that next year in exactly the same spot, yet again the lorries will arrive, the men will jump out and work hard, and just like the circus of my youth, - the cinema will come to town !**

Mark Trompeteler MBKS  
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With special thanks to Geoff Bissex for his time, co-operation and the photographs.



# Escape from Epsom

Notes from a Movie Engineer's Diary...  
by Billy Bell, formerly with  
BTH and Westrex Co.



I spent several weeks in three mental hospitals during the summer of 1962. The reason for this was not because I was sectioned under the Mental Health Act, but because these three hospitals, located near Epsom, Surrey, had, until now, only been allowed to show films with just one 35mm projector.

My task was to install a second projector, with changeover facilities, in each of these hospitals.

In the past, the licensing authorities, being mindful of the awesome litany of cellulose nitrate fires, had been draconian in applying The Cinematograph Safety Regulations, and would only allow each hospital a single 35mm projector with a maximum spool capacity of 2,000 ft. This meant that a full length feature film could only be screened one reel at a time. It took the licensing authorities almost a decade, after the discontinued use of cellulose nitrate film, before finally allowing the installation of a second projector at these institutions.

The hospital staff had been instrumental in bringing about a change in the safety rules and were delighted with the prospect of now seeing films being screened without interruption.

Previously, when films were shown, usually in the Great Hall or Dining Room area, the staff would sit in the front row on comfortable sofas. Patients would be seated behind on hard chairs and segregated into two rows, with boys on one side of a centre aisle and girls on the other. At the end of every twenty minute reel the houselights would be turned up and the staff would again separate the boys from the girls.

At one hospital the members of staff pointed out to me that the picture was not always in focus and sought my advice on the matter. After checking lenses and the optical quality of the porthole glass my attention turned to the trusty projectionist. I accompanied him to the medical centre, where an eye-chart test confirmed

that he needed glasses.

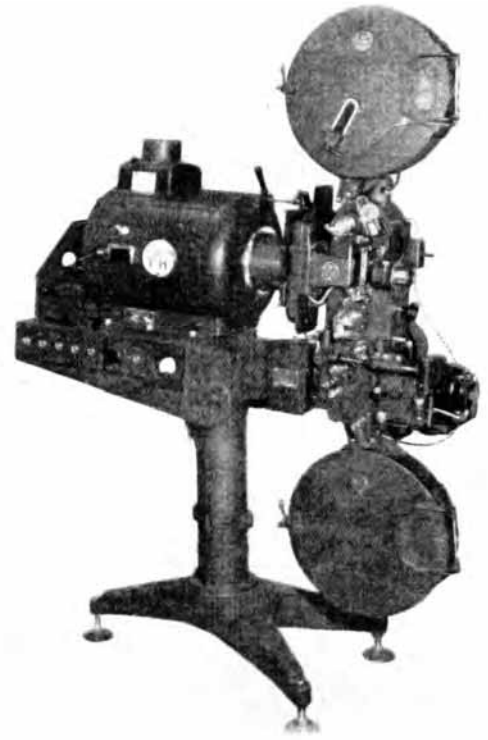
My work at these mental institutions was scheduled to take one week per installation. On the last day of this period I worked alone until very late in the evening in order to meet this target, and with the installation completed, I finally headed for home. I let myself out to the car park and drove through the grounds, only to find that every exit was barred by massive wooden gates. I was now locked inside the grounds and realised that any attempt to get back into the main building was likely to be construed as an attempted break-in.

I heard voices coming from the street outside and left my car and climbed up and looked over the high perimeter wall. I shouted down to two young cyclists who were standing near a telephone box. I explained that I was locked in and asked them to phone the

hospital for someone to open the gate. It was obvious that they thought that I was a patient on the run. I told them that I had a car behind the gate, but they dismissed this as much too implausible. I drove back to the main building and leaned heavily on my car horn. It wasn't long before lights came on everywhere, with people leaning out of windows, all telling me how late it was. When I was finally given my freedom I had the satisfaction of surprising the same young cyclists with a blast on my car horn as I passed them on my way home.

The photo above shows an early type BTH projector, with C type lantern, A/H mechanism and Rotary Magnetic soundhead, which was installed as the No. 2 machine, to match existing equipment at Epsom hospitals.

*Billy Bell*





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# Home Cinema It's Showtime!

Graham Edmondson of Vivid Research continues his series of articles on bringing the highest standards to home cinema installations.



**D**uring my many years involved with film sound, we regularly quoted famous film directors who claimed that sound was "50% of the movie experience". Assuming that they meant the picture was the other 50%, to me this always left out some other vital ingredients to an audience's enjoyment of a great night at the cinema. How about the recipe for the perfect 'movie experience' being more along the lines of – 40% great storytelling, 20% beautiful imagery, 20% stunning sound, and 20% cinematic performance?

And it is this last element of cinematic performance that I want to focus on more. Of course cinema projectionists have to maintain technical excellence of picture and sound quality, but above all it's their showmanship for putting on a great performance to the audience that counts most. The correct timing of curtains, dimmable lighting, motorised masking, good lens changes, comfortable sound levels are all vital to present the film in the best possible way. So why leave any of this out when thinking of designing a cinema at home to recreate the magic of the silver screen?

For those with the luxury of having a dedicated cinema room at home, all the trimmings and glitz of a 'real' cinema can easily be incorporated - luxury cinema chairs, a fixed screen with motorised masking and curtains, a curved stage below the screen with LED lighting trim, hidden speakers etc. But that still leaves one rather important element missing – the projectionist to control all of this and run the performance. Whilst the super rich may well indeed be able to employ their own personal projectionist, the rest of us are left needing a sophisticated and well designed control system to take over this role.

And no matter what the budget is, every home cinema should have one.

The loudspeakers can be the finest in the world, the projector could produce spectacular quality, but if the system is too complex to operate properly then all this sophistication is wasted. Having a coffee table full of remote controls with fiddly buttons (and all labelled with odd looking symbols) makes it highly likely that a wrong sequence of button presses will get the system into a real mess.

Instead, a single button press on a hand held touch panel controller of a well designed control system can dim the lights, lower the window blinds, drop the ceiling mounted motorised projection screen and projector, turn on all the equipment and set it up in the right modes. And then start to play the main feature of the evening for you.

So let's look in more depth at the technical aspects of how such a control system is designed and integrated as the heart of a home cinema system.

## INFRA RED CONTROL

Despite being a technology emanating from the 1970s, IR (infra red) remote control still remains the most universal way of controlling most equipment within a home cinema system. Since virtually all products these days are shipped with their own IR remote control, their unique codeset can very easily be 'learnt' into any of the universal 'learning' remote controls available on the market. It's as simple as pointing one at the other and pressing the button that needs to be learnt. Many of these learning remote controls use PC software to store and configure all the



*For those with the luxury of having a home cinema, the trimmings and glitz of a 'real' cinema are essential.*

codesets for different equipment. They allow long strings of codes for different equipment to be created in the form of "macros". These macros enable one single press of a button to fire off lots of commands to different equipment and set it all up at the same time.

There are two main drawbacks with IR control however. The first is that the communication is only ever one-way i.e. an IR control system sends commands to equipment but receives no confirmation back that the commands have been successful. The control system has no idea what state the equipment is currently in.

An example of how problematic this can be is simply trying to turn all the equipment on or off at the same time. Most modern equipment these days only has a single 'power toggle' IR com-



*dedicated cinema room at home, all  
cinema can easily be incorporated*

mand i.e. the same command switches the unit on (if already off), and also off (if already on). When combining these power toggle commands for all equipment into macros, an IR control system has no idea whether or not the equipment is already on and off. So when the macro is fired it is quite likely that half the equipment will end up being switched on, and the other half being switched off by mistake.

The second problem is that an IR control system needs a 'line of sight' to the front panels of all the equipment it controls (above). With minimalist design being more fashionable these days, the trend is to hide away as much equipment as possible instead of having it all on display. But hiding away equipment of course blocks any IR beams that need to be fired at the equipment. Luckily there are some very easy and cheap solutions to

overcome this. A tiny IR 'eye' can be concealed in furniture or walls and this single 'eye' receives the IR beam from the remote control and sends it on to all the equipment. It distributes the IR codes to multiple small adhesive IR emitters which are stuck over the IR sensors on to the front panels of all the hidden away equipment. Using sticky tape to control a high end home cinema appears a rather crude solution, but it works surprisingly well.

### **CONTACT CLOSURE AND 12V TRIGGERS**

A very robust and reliable way of controlling certain home cinema products is to use relay closures or 12V triggers to tell the components exactly what they should be doing. This method of control however, is only practical for equipment that needs very few individual commands for operation – a motorised screen only needs two commands to go up or down, window blinds only raise or lower, motorised masking moves between 16:9 and 2.35 aspect ratios, screen curtains either open or close etc.

### **RS232**

Like IR control, the RS232 (Recommended Standard 232) protocol has a long history dating back to the 60s and 70s. It is a serial binary data protocol which was developed specifically for telecommunication. Whilst RS232 ports have been standard on computers for many years (i.e. the "serial port" of a computer), they are now being superseded by the faster USB standard. But RS232 adoption continues to grow in home cinema and home automation control systems.

The speed of RS232 may now have limitations in the computer world, but it is more than sufficient for the basic commands to tell an audio visual system how to operate. The great advantage it has over IR control is that it provides true two way communication between the equipment and the control system. This means a control system knows at all times what the equipment is actually doing – e.g. what input a projector is currently set to, whether or not a DVD player is playing a disk or in pause mode. The control system can then issue new commands according to this information it already knows.

A good example of this is the RS232 port of a Sky satellite receiver. This port is constantly outputting information about which Sky channel and what program is currently playing. This information about the program could then easily be displayed scrolling across a touch panel control system – a nice feature to let the user have more details about the particular TV and radio programmes they are enjoying.

### **IP CONTROL**

Whilst RS232 provides a very effective and well established two way control system, the limited speed of RS232 data transfer has become a problem for more sophisticated products that are emerging into the home cinema market. And it is for this reason that these products are using



IP (Internet Protocol) control to connect directly into a home network. They can be controlled in the just same way as networked computers and the internet, often by using a standard internet browser.

This then opens up immense possibilities for high speed control and data transfer and the home cinema now becomes much more integrated into a whole home network for new entertainment sources to be shown on the big screen. For example, it becomes easy to download a TV program from the BBC iPlayer internet service and then hit a button on the control system to watch it whenever you want in the home cinema room. Holiday photos downloaded from a digital camera onto a computer are instantly available to project onto the big screen. Films and music collections can be stored on a central server hidden away in a cupboard, loft or garage and instantly recalled from an IP control system which makes scrolling through long lists of titles or cover art very quick.

### **DESIGNING A CONTROL SYSTEM**

In practice, nearly every modern home cinema installation combines all of the above methods of control to ensure perfect integration. A hand held touch panel controller (above) may sit within an IP wireless network and talk to a base station unit also sitting on the same IP network. This base station would be near the rest of the home cinema equipment in a hidden cupboard and would output commands to control the whole system. Some control of equipment would be via IR commands (DVD players, Sky boxes etc), other equipment would use contact closures and 12V triggers (screens, masking, blinds etc), RS232 protocol would be used for equipment that talks back to the control system (projectors, lighting systems etc), and finally the sophisticated media servers would use IP control over the same network infrastructure.

And that just leaves you to sit back, enjoy the glitz and showmanship of the cinema and adopt the combined roles of chief projectionist, film booker, programme scheduler, and alternative content manager, all by using a single hand held controller from the comfort of your own sofa.

*Graham Edmondson  
www.vividresearch.co.uk*

**B**ong! Bong! Bong! I looked at my watch: 6am. I was being given a wake-up call by the bells of the local church. I came out of my sleepy fog and remembered that I was now here in Krnov in the Czech Republic. It was only yesterday (Friday) that I'd spent getting here, with what should have been a 6 hour straightforward journey becoming a 12 hour "epic" which would try the patience of anyone... The heavy fog in Prague airport the previous morning had been the culprit. Now, despite it all, I was here, and the goal of my journey was a visit to the Kino Mir 70 cinema - the only 70mm theatre remaining in the Czech Republic which still shows 70mm films.

I was here at the invitation of cinema manager Mr. Pavel Tomešek, as well as the organizer of the event, Mr. Jakub Klima. Later this Saturday I would be giving my lecture titled "The Wonderful World of Film Formats", my 30 minute presentation designed to give ordinary people an introduction to film formats and film presentation techniques. I had been met on my arrival at Ostrava Airport by Jakub Klima. He drove me to Krnov through a countryside which looked almost like Denmark, except for all the less-than-beautiful billboards. After checking in at the hotel and leaving my luggage, Jakub and I had walked to the cinema. It had become dark, past eight in the evening, and the city was quiet. A slight rain didn't matter much as we walked less than 5 minutes before we reached the cinema. I noticed posters and advertising for the 70mm event everywhere. These guys are serious! The street in front of the cinema was crowded with cars - which is unusual according to Jakub. Inside, a large audience were watching the Jets and the Sharks - the singing ones, that is, and how they played it cool with "West Side Story" in its 70mm splendour. From a monitor in the foyer, staff could hear the soundtrack. It was a fairly new English 70mm print in colour from German 70mm aficionado & expert extraordinaire Jean-Piere Gutzeit in Berlin, Germany, but as I arrived very late, and was tired after 12 hours on the road, I had no wish to see "West Side Story" at that time, but will look forward to seeing the new DTS 70mm print in due course.

**THE CINEMA**

The cinema, called "Kino Mir 70", was built around 1920 and is the only cinema left in The Czech Republic with 70mm projection equipment. The building is owned by the local county and they rent it to the city. It is now managed, with great enthusiasm, by Mr. Pavel Tomešek. From the outside, two sets of doors lead into the cinema and its magnificent and spacious foyer. Between the doors with wooden panelling, is the box office and concessions sale. Opposite the box office is a cloakroom managed by staff all dressed in cinema uniforms. To the left of the entrance is a grand staircase leading two floors up to the cinema. To the right the Kino Mir 70 hosts a DVD rental



# 70mm isn't dead it just smells funny!

Thomas Hauerslev takes Cinema Technology readers on his journey to an unusual 70mm film festival in Krnov







From top left - Cinema manager Mr. Pavel Tomešek and the organizer of the event, Mr. Jakub Klima; views of the projection room, the foyer and the auditorium.

shop. Mr. Tomešek has his administration office next to the DVD sales. Adjacent to the stairs is the registration desk for the weekend guests, where I also collected my weekend delegates

pass. Brochures and flyers about the program were nicely organized in brochure holders and window sills. Brochures were in Czech; it would be nice if they were in dual languages next year.

Everywhere you look in Kino Mir's foyer, there is reference to 70mm. In the centre of the foyer is an exhibition of Meopta 70mm projectors and splicers. There is a significant smell of vinegar from the fading reel of 70mm film hanging on one foyer projector. It just assures me, once again, that 70mm is not dead, it just smells funny!

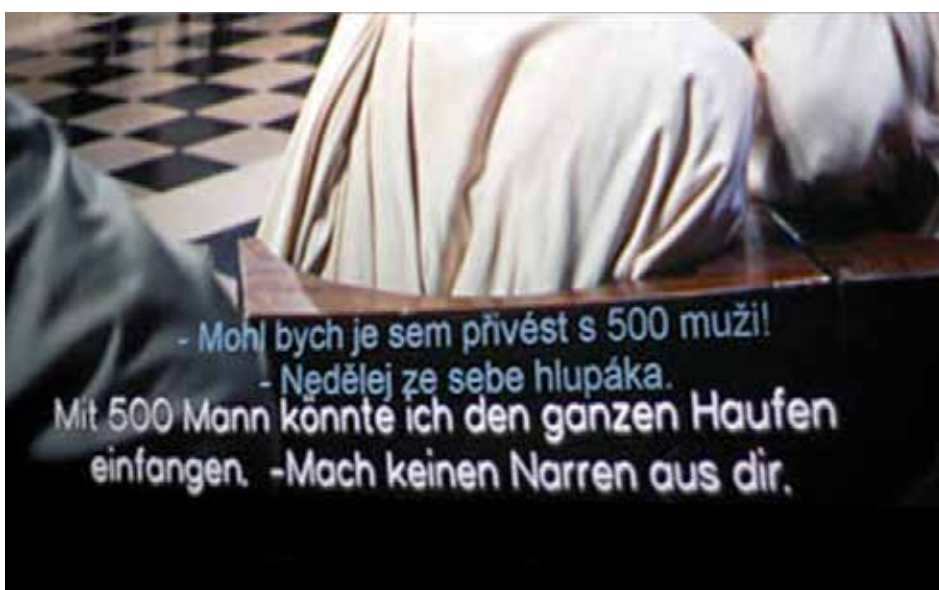
All around the foyer, which could easily accommodate another cinema – are movie posters from 70mm films presented in Czechoslovakia over the past years. Pavel Tomešek is a dedicated 70mm film fan, and all conceivable and available wall space has been covered with posters and 70mm stickers from the past. It is striking how different pre-1995 posters look in Czech. A lot of effort was put into making the movie posters be an art form. Jakub also told about a book just recently published about Czech movie poster art.

### THE AUDITORIUM

I take the stairs up to the cinema entrance, which is up on the first level, and find even more Meopta projectors on display as I ascend. Staircase walls are also covered with posters for coming features, but also the occasional classic movie, all properly hung in glass frames. On the second floor, the staircase splits, leading up to the two entrances into the cinema. I enter from the rear of the cinema, and behold: a very nicely sloped cinema. Walls, carpets, seats and curtains are green. "The cinema is green, because it is good for the soul. It relaxes you" Jakub explains. And it looks very good, and as green is my favourite colour, I have to agree with him. Less than a year ago, all the old seats were replaced by new seats. The cinema is a conventional "shoebox" shaped cinema with 14 curved rows with 322 seats and a 14 by 7 meters wide curved screen, which nearly covers the end wall. It is pleasingly dimensioned, I feel. Underneath the projection room window, is a Meopta control panel, which allows the projectionist to remotely control focus and image position (framing), as well as house lighting, of course. In the front of the screen there is a stage big enough for live performances. The first row of seats is also not too close to the screen. The view of the auditorium from the screen end of the cinema is striking.

### THE PROJECTION ROOM

On my way up to the cinema I had noticed a door, which turned out to be the gateway to the projection room. And sure enough, the number of 70mm reels and cans reveals we are on the right path, and shortly I am in projection. Nearly a square room, 4 machines are pointing towards the screen. In the middle of the room, a cabinet with lenses, and in the rear of the room, the rewind table. An unusually ergonomically-friendly rewind desk, as it was sitting on the floor, so the projectionist doesn't have to lift the heavy 70mm reels so much. Walls are covered with posters and notes for



the projectionists. I am introduced to Jan and Petra who are on duty today. They don't speak English, so Jakub is my guide and translator. A large rack with sound equipment tells me this is a state of the art cinema. The projection room is equipped with two Meopta UM 70/35XB 70mm machines and two Meopta Meo5XB projectors and a Meopta Meo II. X for 16mm film. An impressive array of machines in a fairly small projection room. The Kino Mir 70 is equipped with a Dolby CP65, DA20 and a SA10 to play Dolby Digital EX. Two readers for DTS 70mm have been bought already and are ready to be installed with their DTS XD10 player. Speakers are from Kelonic Cinema Sound and they have 3 stage channels, plus subwoofers, and 16 effects speakers. The Kino Mir 70 boldly believes in 70mm, and all this in a city with only 27,000 inhabitants.

The projection room looks like any projection room I have come across the past 30 years. There are film clips on the walls, sound loops ready to be used to set up sound, posters, calendars with nudes, dimmed light, "that smell" and the sound of film passing over sprockets,

xenon cooling fans, and the light coming out of the machines. The Meopta UM 70/35XB is a very quiet machine, even with air cooling of the gate. The Kino Mir 70 still does change-overs, and 70mm is no exception. I noticed the Polish and DDR prints had square motor marks and circular change over marks. Subtle differences. At present there is not room for a platter system without removing some equipment.

#### FESTIVAL PLANNING

Jakub and I leave the Kino Mir 70 to go back to the hotel and have supper and an informal meeting about festival planning. Jakub Klima, 23 and enthusiastic co-organizer of the 70mm weekend tells me how difficult it is to find 70mm prints. Czech film distributors do not have many 70mm prints left and seem to be largely uninterested in the endeavour in Krnov. There are some private collectors in the old east, but they are not interested in lending out their 70mm prints. We discuss how to address the movie companies and Hollywood Classics. I encourage him to continue and build up a network across Poland, Hungary, and Romania etc, to exchange information and bring out the

old 70mm films again. I am told the first-ever 70mm film the Kino Mir 70 ran was "Those Magnificent Men in Their Flying Machines" on 23 May 1969. Maybe they can show it again next year in the new DTS 70mm print from Fox?

#### THE PROGRAMME

Despite the difficulties in obtaining prints, Jakub did manage to make an interesting program for this year's event.  
 "Battle of the Bulge" a very red incomplete English 70mm print with Czech subtitles.  
 "Pugachev" a Russian blow up with original sound and Czech subtitles  
 "West Side Story" a newish English 70mm print with German subtitles  
 "Hauptmann Florian von der Mühle" East German DEFA 70 version with Czech subtitles  
 "Kazimierz Wielki" Polish version with Slovakian subtitles  
 "Lawrence of Arabia" a newish English 70mm print with German subtitles  
 "Spartacus" (Stanley Kubrick, 1960, English version with German subtitles  
 "Amadeus" English 70mm blow-up with Czech subtitles

For "West Side Story", "Lawrence" and "Spartacus" the Kino Mir 70 superimposed Czech subtitles live during the film. This was done from the first row with a digital projector and a laptop. During the film one of the staff was sitting and advancing the subtitles as the film ran. Almost a historical nod to the Cinerama operator who controlled the three projectors of the cinema when that format came out. The subtitles were lifted from a DVD, so I was told. "Spartacus" had laser-etched German subtitles and superimposed on top of them, the improvised Czech subtitles. Showmanship the Czech way.

I only saw two films this weekend because of time restrictions. I settled for the DEFA 70 "Hauptmann Florian von der Mühle" from DDR and the Polish blow up "Kazimierz Wielki".

"Hauptman" was a strange experience of Chaplin-Keaton like comedy, bad acting and lack of directing. I understood very little of the dialogue. It was a costume piece set around the days of Napoleon and Florian's race to get some money back. The colours of the vintage 70mm print still held up, primarily because it was NOT printed on Eastman stock. I suspect it was Orwo or Agfa Colour. Most of the sound was likely re-dubbed in a studio, as it had this very odd and stagey quality to it. It did not sound natural at all, and was sometimes even out of synch. I wonder what Manfred Krug, the leading actor is doing today. It would be interesting to hear about the filming of that film. "Kazimierz" was better, although I didn't understand any of that at all, except perhaps the story line is about the old king on his death bed thinking back on his life. Set in the 14th

century, it featured spectacular photography and a very good sound space with directional dialogue. As it was a blow up, the images were quite fuzzy from time to time. The blow up process also revealed a less-than-clean laboratory, as all the dirt and hairs turned up as white specs throughout the purple faded film. The acting and direction - I felt - was much better compared to the DDR production. A little over two hours, it felt longer, but it had absolutely great set pieces and spectacle with burning villages, a cast of several hundreds and lots of castles. My Polish friends must forgive me if I have missed the narrative completely.

Overall, the projection quality is very good with the changeovers hitting the right spot every time. The image would benefit with some new projection lenses. Light intensity and focus could be improved, but I am sure they already have that in mind for future improvement. The nature of the 70mm prints varied from print to print. Pavel and Jakub told me this particular print of "Amadeus" had been shown some 4 times a day for a full year in Prague, during the original release. That is around 1400 passes through the projector, which meant that this 70mm print, which still has GREAT colour, is totally ruined, in terms of sound. The perforations are weakened and sometimes torn almost everywhere, and the magnetic soundtrack has peeled off throughout. In fact it is so ruined,



that several reels are unprojectable and have to be replaced by 35mm here and there. I managed to get some of the bad pieces for my collection of 70mm clips. A rare treat, as I ran "Amadeus" for 16 months, 3 times a day when it was released 20 odd years ago. One of my favourite films of all time. My cinema even hit Variety's news, when we rejected Milos Foreman's mid-performance entry, when he asked permission to gain audience reaction, to 'avoid disturbing the audience'.

Between the two films I saw, Jakub had arranged some sort of TV interview between him and me. I never understood the purpose, but I played along as well as I could. Maybe it will turn up as headline news?

Following the two films I saw, I was ready to present "The Wonderful World of Film Formats" in English to a Czech audience. Pavel felt it should be translated as I went along, but that idea had to be abandoned at the last moment because the translator didn't show up. Jakub introduced me in Czech and the lecture played for around 40 minutes including the Dolby Stereo "Listen" demonstration short film after the last slide. Some people came up to me afterwards and said they liked it.

I discovered how few people actually understand and speak English in this part of the world. Being a neighbour to Germany and Poland, many Czech people from Krnov understand and speak both German and Polish. Films are generally shown in their original version with subtitles. Children's films are dubbed, as they are in most territories. Despite the language barriers, 70mm film seems to unite people. This year the Kino Mir had guests from Poland, Slovakia, Austria, Germany, Holland and Denmark. Very impressive, as Krnov is not exactly an easy place to visit. Jakub also told me they have guests mainly from Krnov, Ostrava and Brno, but also from Prague. The festival has its own web site with impressive animations, but for a foreigner, the English language information is tricky to find, and once found, it is hard to read. Jakub assures me the web site will be improved, as there is already interest in doing a fourth festival in 2009, but the decision has not yet been taken. A lot of natives propose the Kino Mir 70 should show "this film" and "that film", so the interest is there to continue to show 70mm film.



Mr. Jakub Klima and Mr. Pavel Tomešek with the new DTS 70mm reader

## REACTIONS

I felt the festival was well received by the audience, and surely "Lawrence" on Saturday evening was a crowd pleaser and actually was the official Czech premiere. Until now, it had only been seen on TV screens. I counted at least 120 people in the cinema during the film. For "Hauptman" in the morning, I counted around 54 guests. Most, if not all films were introduced, mostly in Czech, and I suggested to Jakub to bring a short summary in English next year, since there were international guests. The soundtrack of "Lawrence" had a lot of tape hiss in the quiet scenes. Whether this was because of the lack of Dolby noise reduction or not, I don't know.

The minor things with the web site, lens issues, and tape hiss in "Lawrence", cannot overshadow the enthusiasm they are showing in Krnov. They are doing a marvellous job at the Kino Mir 70 keeping the best movie experience alive by waving the 70mm flag. I can only recommend they continue as long as there is an interest from the audience. It's an example of how a few individuals can make a difference. If it wasn't for Pavel and Jakub, there would be no 70mm in the Czech Republic. I went home Sunday around noon with a backpack full of 70mm clips, posters and good memories. Thank you for the hospitality and best wishes for the future.

Thomas Hauerslev  
www.in70mm.com



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Tony Bramley, Technical Manager at the Odeon Oxford dual site, wrote to tell Cinema Technology readers the very sad news that his predecessor at the Oxford cinemas, Geoff Chandler, died at the end of August 2008.

*A lovely photograph showing Geoff Chandler receiving his 25 year service certificate from the then MD of Thorn EMI (one of ABC's parent companies down the years), a Mr George Lennox. The photo itself may have some sentimental interest to readers of CT who remember Geoff, or even the times gone by when periods of long service were more officially recognised by an employer!!*



# Geoff Chandler

**G**eoff only retired as Chief in the autumn of last year, and instead of being able to enjoy the long and happy retirement that we all hope for, he was shortly afterwards diagnosed with a very serious illness, and started treatment straight away. Sadly, he lost this fight late on the afternoon of Friday 30th August 2008, in hospital, but with his family at his bedside.

Geoff was originally based at the old Bristol Road ABC cinema in Birmingham. In 1987 after that closed, he came to Oxford George Street ABC and was subsequently made Chief in the early 1990s. In 1998 he inherited the Magdalen Street ABC as well (both are now Odeons, of course) and ran the combined operation until the Autumn of last year.

He was passionate about his job, and a real "old school" projection-

ist. He commuted from Birmingham, along with his son, Carl, who is still here as my most senior technician. I unfortunately never got the opportunity to meet him, but in my 8 months here have heard many tales!

There will be some ex ABC projectionists/engineering staff who read "CT" regularly and who knew him in the course of their work, and I thought that it was fitting that the news, although sad, should be shared.

*Sincerely, Tony Bramley*

*On hearing the news, other ex-colleagues paid their tributes to Geoff:*

"I also knew Geoff reasonably well and share everyone's views about his attitude and passion towards the job. A passion that is inevitably changing with the cinema cultures of today.

Geoff was always looked on by his peers to be a great example of a projectionist who knew what to do and when to do it, in order to create the ultimate grand illusion of moving pictures in a truly traditional cinema.

His Oxford colleagues continue

his legacy by maintaining the kind of presentation standards that he was so passionate about.

I'll certainly miss the times when he wanted to share his views about the way the Cinema Industry should be run!

But more importantly, I will miss yet another of those fabulous, special characteristics that only develop in a person with a long and distinguished career in the box."

"Another 'old' chief bites the dust, fortunately still leaving a team of projectionists at Oxford, (not technicians, not booth operators, not people who've been in the trade for five minutes and think they know it all)!

I knew Geoff as I tried to know all the projectionists who worked for the various companies that I did. If only we could get the knowledge from these 'old' chiefs, and implant it into the supposedly new "chiefs", then we might have box staff that still have a pride in what they do, and companies that respect good staff.

*Farewell to another old timer, projecting images onto the tops of clouds, in perfect focus and with a good light, carbon arcs of course. R.I.P. Geoff."*

*The plush interior of the ABC Cinema in Magdalen Street, Oxford, which Geoff Chandler took over in 1998. The photograph is from Giles Woodforde, Vice-Chairman of the Cinema Theatre Association, who (unnecessarily) apologised for the rather "soft" image quality, saying that he took the shot in his youth, at a time when the then ABC manager (Denis Cave) rather reluctantly let him in to the cinema with the cleaners one morning!*



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The National Museum of Cinema Technology has perhaps, the largest collection of all types of film equipment in the U.K. The Data Archive within the museum holds over 3,000 items including technical manuals, film related documents, press cuttings etc. Membership of the P.P.T. will give you access to these amenities as well as the collections within the Trust's regions.

**JOIN US TODAY** by contacting either of the following addresses or by post direct to the NMCT above.

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## COMPLEMENTS AND BRICK-BATS....

Hello Jim.

First. I would like to compliment you on the online presentation of the magazine.

Second. Re: New chief at Odeon Belfast. Page 10. September CT mag.

Will Angela Bowen be keeping her new job, considering her blatant disregard for the safety procedures with regard to the handling of xenon lamps, not only for herself but those around her?

*Yours sincerely*

*Alan Jones.*

*Regal Cinema. Melton Mowbray.*

*alanjones666@talktalk.net/*

*Members of the BKSTS Cinema Technology Committee also expressed concern at the potential safety aspects of the delightful photo, but felt certain that the lamp would have been 'de-gassed' before being handled in this way. A quick check with Angela proved that this had indeed been the case, so our H&S watchdogs can be reassured that all is well at the Odeon Belfast.*

*Jim Slater*

## FOLLOWED BY 'HELL HATH NO FURY LIKE...'

*Watching the exchange of correspondence between Angela and Alan (and there were phone calls, too, I gather!) led me to think that it will be a long time before anyone else even thinks of criticising a fellow projectionist, whatever their gender!*

Hi Jim

Oh my goodness, people do need to lighten up, that letter shocked me no end!! On the day that the photo was taken we had had a tour of the Imax projection room, and a few of us had our picture taken with the obviously



de-gassed xenon. We were, of course, all extremely careful, as we are trained to be, and had the permission of the Technical Manager on the site to have the photos taken. We are all used to working with smaller xenons, so it was a real treat for us to see the much larger kit. I really don't think any of us like to be talked down to as if we are little children, and I really didn't think anyone out there would even imagine that we weren't being careful.

I was so enraged by that I rang Alan Jones myself! He apologised and said if he had known the circumstances he would not have sent a letter, he was also surprised nobody else had written in. I said it was pretty obvious (probably) that everyone knew it would have been de-gassed. I explained that I was very insulted, not to mention hurt, as I am good at my job and absolutely love everything about the cinema.

*Best wishes  
Angela Bowen*

## AND THE PUBLICITY TRAILER FOR ODEON, BELFAST....

*Somehow it seemed that we might owe them a favour, so here is some more information that Angela sent - do call in if you are in Northern Ireland, there is still time to see some of these classic movies.*

We are doing well here in Belfast, with our General Manager Karen Singleton. Projection is running like a dream now and all has settled down. Not too many huge movies out at the moment (come on Bond!) but we have started a flashback season which is going really well. Our first film was Aliens, it was outstanding on the big screen! Predator is next and what an excellent print for 1988. We then have Die Hard, The Terminator, Back to the Future, Pulp Fiction [December 1st] and Reservoir Dogs [December 15th]. It is an amazing series for for big movie fans, our first night was a full house and we are hoping that this will be repeated throughout the series.



## CAN ANYONE HELP TO FIND THIS RILEY FILM?

As Newsletter Editor of the Scottish Riley Enthusiasts, the club which brings together owners, drivers and admirers of these famous British sporting cars, I am researching the appearance in film of a Riley Sports car and wonder if you may be able to help me find out more.

The film in question is the 1963 tourism promotion, "A View from The Bass", produced by Campbell Harper Films, of Edinburgh. In it, a rare special-edition 1937 Riley Lynx Concours model is seen repeatedly, acting as a link among the location sequences. Remarkably, this very car is extant and in the care of two of our club members, Duncan and Garry Whyte, who are currently restoring it. The photo shows the Lynx at Glasgow's Kelvingrove Museum during our visit in April this year. Sadly, Alan Harper passed on many years ago, as did his cameraman on this movie, Henry Cooper. Campbell Harper Films, as you will know, was sold in 1972 to Park Films, which closed shortly afterwards. I believe that Alan



Harper was a member of the then British Kinematograph Society. I am keen to tell our members more about this car and its film career and wonder if you may be able to help me to contact anyone associated with the production, or a relative of a member of the team, who can help me understand to whom the car belonged, who (a lady) was driving, and so on - some of its passengers in those sunlit days of 1963 were clearly children. Any help you may be able to offer will be greatly appreciated.

*Best wishes  
Gordon McAllan  
Whitelaw Farm, Strathaven,  
Lanarkshire ML10 6QP  
01357 440339 / 07759 815933  
gordonmcallan@tiscali.co.uk*

## Colour Technology Quiz (p47) Answers

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- |                   |                                      |
|-------------------|--------------------------------------|
| 1. 11111          | 9. approx. 250 cd/m <sup>2</sup>     |
| 2. 1f             | 10. approx. 2                        |
| 3. 255, 255, 255  | 11. 64 μs                            |
| 4. f/11           | 12. approx. 2.5                      |
| 5. approx. 3200 K | 13. 2, 3, 17                         |
| 6. -1             | 14. 0.18 or 18%                      |
| 7. 3              | 15. 1/48 sec or "less than 1/24 sec" |
| 8. 8              |                                      |

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