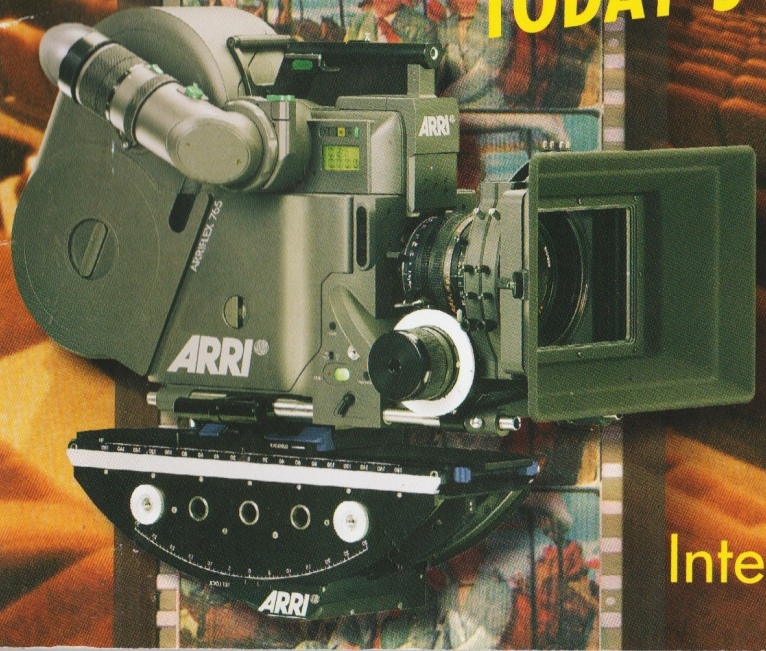
DIGITAL & 65mm

TODAY'S TECHNOLOGY FOR TOMORROW'S CINEMA



History and Development of 70mm

International 70mm Publishers, The Netherlands

70MM

Introduction

In October 1955 Rodgers and Hammerstein's musical ***Oklahoma!*** premiered in the USA as the first movie in the spectacular ***Todd-AO 70mm*** process with 6-channel magnetic stereo sound! Since that year more than 60 motion pictures were filmed with original 65mm cameras and projected with 70mm film, thus creating 5mm extra space for the six magnetic sound tracks.

Among these movies were famous titles like:
Around the World in 80 Days, Porgy and Bess, Ben-Hur, Exodus, West Side Story, Lawrence of Arabia, Cleopatra, My Fair Lady, The Fall of the Roman Empire, The Sound of Music, 2001 - A Space Odyssey, Chitty Chitty Bang Bang, Ryan's Daughter, Hello Dolly, etc.

Since 1964 filming on 65mm diminished mostly because of a new 'blow-up' process developed by Panavision to make 70mm prints from 35mm negatives. In the nineties however, a few efforts were made for a rebirth of 65mm filming: In 1992 Director Ron Howard and his Director of Photography Mikael Salomon decided to film ***Far and Away*** with System 65 from Panavision, while producer Mark Magidson and director Ron Fricke were filming their non-verbal documentary film ***Baraka*** in Todd-AO 70mm in 24 countries all around the world. For nearly two years they used the new Cinespace 70 (Todd-AO) cameras because they offered the most acceptable rent for such a long period. In 1994 Bernardo Bertolucci had taken the decision on the recommendation of his DOP Vittorio Storaro to shoot the Asian parts of ***Little Buddha*** with Arriflex 65mm cameras in the Kingdom of Bhutan. The other part of the film was photographed in 35mm Techniscope, while prints were made in 70mm. Maybe this inspired Kenneth Branagh and his DOP Alex Thomson to shoot their 4-hour version of ***Hamlet*** with Panavison System 65 cameras. This was the last original 70mm film made with 65mm cameras!

Meanwhile cinema attendances are in danger again and the trend to build large multiplexes with large screens has come to a stop. In 1998 – a 25 screen complex with 9000 seats – has opened its doors in Madrid. The largest auditorium of this Kinepolis complex has 1000 seats and a screen of 24 x 10 metres (948 x 395 inches)! And all those large screens will be served for the time being with 'old fashioned' 35mm prints but mostly with 2K or 4K digital images. But the other way to get a bright and sharp image on those large screens is the use of unsurpassed 'original' new 70mm prints or digital images originated from new 65mm negatives!

In 1989 the restoration of the famous David Lean film ***LAWRENCE OF ARABIA*** with new excellent 70mm prints wrote film history! In 1991 ***Spartacus*** was restored in Super Technirama 70. And in 1994 a 70mm restoration of ***My Fair Lady*** at its 30th Anniversary, proved the quality of this great musical. Nothing happened until 2002, when there was an unexpected revival in Hollywood towards classic 70mm film presentation. For the first time since years, new 70mm prints of ***Sound of Music***, ***Patton***, ***Hello Dolly*** and ***South Pacific*** were screened in Los Angeles and other large cities throughout the USA. These prints had no magnetic sound tracks on the film, because of the abandoning of magnetic striping, but sound on a separate CD-Rom, all in sync with the action by a DTS time code on the film. In 2006 we saw new 70mm prints of ***Lord Jim*** and the four hour version of ***Cleopatra***, followed in 2008 by ***Star!***, ***Khartoum*** and ***West Side Story*** and ***Flying Clipper*** in 2009. What's next ? Which dare-devil director will shoot his new film with 65mm cameras for 70mm prints and 4K digital projection?

Even the original 3-film-strip process ***Cinerama***, from the fifties, was back for the first time in the Cinerama Dome in Los Angeles and in the restored Cinerama Theatre in Seattle with new prints of ***This is Cinerama*** and ***How the West Was Won***! Since 1993, Pictureville Cinema in Bradford, UK, is the only venue in Europe equipped for showing original 3-strip Cinerama movies.

But it is important that famous classic 70mm films are kept in good condition in archives and that all famous 70mm epics will be restored to their original glory for our children and grandchildren.

International 70mm Publishers, The Netherlands

International 70mm Publishers present:

DIGITAL & 65mm

Today's Technology for Tomorrow's Cinema

History and Development of 70mm

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A classic 70mm filmposter goes as a supplement with this publication

Most of the illustrations and the pictures of posters are from the 70mm Publishers own Archive. Only a few pictures are provided by others, which is indicated in the picture itself. Regarding the 70mm film poster: most illustrations are from our own archive, except 3 pictures: Ben-Hur, Patton and Fall of the Roman Empire. They were gratefully provided by the Cinema Museum in London.

Preserving 65mm Classics

by Andrew Oran

It's been our good fortune at FotoKem, a photochemical and digital post production facility based in Burbank, CA, to have participated in the preservation and mastering of quite a few 65mm classics over the past 6 years, since establishing our full range of 65mm services in the spring of 2004. Our singular experience in this regard has made us uniquely aware of the issues and protocols associated with preserving 65mm classics.

65mm preservation work, as with that of any film format, begins with a little bit of detective work and a paper trail. Assuming your source element is the 65mm cut, original negative, accompanying paperwork – often taped to the film cans housing the negative - can reveal a great deal about the condition of the film even before inspection. When was the roll last printed or cleaned? How often has it been printed? Are the timing lights consistent from scene to scene? Is there a record of editorial changes?

The investigation continues with an inspection of the element. Here the main objectives are two-fold: (1) establish the physical condition of the element, while taking any remedial steps necessary to insure its ability to be safely transported during the printing and/or scanning processes; and (2) examine all clues that might corroborate the creation date for each component of the source element. The inspection is conducted in a temperature and humidity controlled environment. Measurements are taken with precision calibers and pitch gauges to confirm the transportability of the negative in pin registered camera movements, common to film scanners. Perforation damage is repaired, and splices are checked, with any over-accumulation of tape back-up or glue carefully trimmed. Date codes – which unfortunately are not completely reliable in 65mm prior to 1965 - are cross-referenced to 'flag' any second-generation duplicate negative elements, so that earlier generation elements (such as separation masters) can be tracked down as alternative sources, if available.

Following the physical inspection, the preservation pipeline moves onto photographic issues and processes. With a little luck, the source element will have arrived with color information in the form of color/grading cards or punch tapes. These are entered into our 'Photo-net' system, connecting all film handling work stations facility-wide, and a manual check is performed of the film element vs. the color record, to see if scene to scene cues match, one to the other. Once 'cueing', as the process is known, is completed, the source element moves to a color analyzer, so that a visual check of the provided color information can be performed.

The 65mm color analyzer affords us the opportunity to either check supplied color information or begin the re-timing of a 65mm classic from scratch if no color information is available. The most common result is a hybrid: original 65mm printing lights that are modified with an over-all correction to account for differences in lab processes over time, or from one facility to the next.

Following color cueing and confirmation, the source element is then cleaned in preparation for contact printing on a 65mm contact printer. Each film lab's in-house engineering staff - the real unsung heroes of 65mm preservation work – are tasked with modifying these printers to mitigate issues like flicker, instability, bubbles, breathing and color disparity across the frame. Their ingenuity and precision make possible new 70mm prints and 65mm intermediate elements that are accurate, archive worthy representations of their sources.

A new 70mm print is then processed and projected on the big screen, before final adjustments are made to color (manually, through the application of color filters on a calibrated lightbox) and integrated into the color printing 'blueprint' of a new 65mm intermediate element.

The printing component of the 65mm preservation pipeline serves to create a preservation copy (a 65mm Intermediate Positive, or IP) of the film in question, and to create a source element for digital mastering. In some cases, the 65mm IP will become the source element for digital mastering, while in other instances the IP will serve only as a back-up (or protection) element prior to embarking on a full digitization of the show's original negative. At FotoKem we QC 65mm IP's on a 50″ plasma monitor within our 65mm HD telecine suite to insure their photographic integrity.

Digitizing 65mm classics at FotoKem occurs on one of our two matched IMAGICA XE 65mm scanners, nicknamed 'Big Foot' and 'Yeti' due to their sizable footprint. Armed with 11K sensors, they are the world's only film scanners able to sample 65mm negative at 8K resolution 'perf to perf', and have been used in this capacity on many 65mm classics, including '***South Pacific***', '***It's a Mad, Mad, Mad, Mad World***' and others. While the sampling of the negative element occurs at 8K (wide) resolution, digital mastering – which moves us from preservation into the realm of restoration – occurs at either 4K, 2K or HD resolution, depending on the deliverable requirements and budgetary realities of each project.

4K digital mastering from an 8K scan is an ideal situation when preserving or restoring a 65mm classic. FotoKem is engaged at the time of this writing on such as restoration for 20th Century Fox on the 65mm classic, '***The Sound of Music***'. The results are as breathtaking as you might imagine; and the digital tools at our disposal are affording us the opportunity to improve long-standing issues such as flicker and gate hairs. We are guided in this work, as in all of our 65mm preservation work, by an over-riding maxim: honor the original, and do no harm.

65mm classics handled by FotoKem include: ***Dr. Dolittle***, ***West Side Story***, ***It's a Mad, Mad, Mad, Mad World***, ***South Pacific***, ***Khartoum***, ***Can Can***, ***The Sound of Music***, ***Baraka***, ***Oklahoma!***, ***The Bible***, ***Cleopatra*** and ***Star***!

(pictures FotoKem, see page 19)

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Prologue

The creation of a publication about 70mm processes is taking a great risk for being called 'old-fashioned', living in the past, unaware of the developments in the digital world, etc. *But it really was* a fact that when presented in optimum conditions in a large theatre 70mm films were the ultimate cinema experience in 'far (and) away' times!

However seeing the latest developments of digital film presentation, the image quality of 4K is really stunning and we are convinced that the quality of digital images will improve even further. For that reason we have included some chapters with views on the (digital) future and other possibilities in the cinema. They are endless and exciting. The future of the majority of cinemas will be digital with lots of 3D! So we could argue that there is no necessity for 65mm filming and 70mm presentation.

In our computerized society there are still those who use pen and paper for writing. Millions of ballpoint pens are produced every year and so it will be in the near future! Our children have computers at school but they still need to learn to physically write. The vinyl record is back on a small scale for lovers of that 'old fashioned' medium and even 8mm cine cameras are still on the market for enthusiasts and special projects. We think there might be a small market for retrospective screenings of reputable classic 70mm epics, especially when new prints give the experience a superb new dimension. And *new* prints are available!

Combinations of 65mm filming and digital projection are considered on different pages of this book. Despite all the great progress in digital presentation, 65mm filming still has lots of possibilities with great advantages. See the pages: 'Waking the Sleeping Giant'. And a premiere release with only 70mm prints in the first months is an excellent weapon against **piracy**!
Many parts of this publication are full of memories. Memories of 'long ago' and 'far away'. If you were there, you were lucky. You should keep those memories alive for next generations. But if you were not there, look at the beautiful pictures and stories in this publication. Those were the times of the widescreen era and when you have the chance to see a new print of a classic 70mm film, like the 3½ hour version of ***Cleopatra*** with Elizabeth Taylor, Richard Burton and Rex Harrison, don't hesitate but **go**, even if you have to travel far for it! From a showmanship perspective a 70mm presentation on a wide and curved screen in a large cinema provides an experience that is far beyond the home cinema experience!

In our opinion 70mm screenings were mostly festive happenings to the eyes and ears, that's why we have tried to bring back those memories by a lot of full colour pictures in this publication. And if you have an influential position, don't hesitate in trying to promote the restoration of **the old classic 70mm heritage** for yourself, for your children and your grandchildren.

Johan C. M. Wolthuis, Editor/publisher

Will Cinemas Survive Despite the Digital Revolution?

French film star Isabelle Hupert noticed during a visit to China that people in the streets knew her films better than the people in her homeland! She was surprised and understood that this was caused by the successful street business in copied DVD's. She called the Chinese film pirates modern Robin Hoods! There are many places in the world with a great black market for DVD's. The Peruvian capital of Lima in South America is known as one of the largest black markets for copied DVD's, at the Polvos Azules, a paradise for movie lovers?

Yet it is the only possibility in those countries for the majority of the poor people to see a film. Selling copied DVD's is not only a question of economy and judical aspects, it is the only way for those people to earn some money, it has become a part of their survival!. It will ***never*** be possible to stop this 'piracy'! It's better to accept it as a social reality!

Philips Home Cinema (aspect ratio 21 : 9)

In the fifties the greatest problem facing the cinema was the emerging television and whole families were seated around that miracle box at home! The answer of the cinemas was a lot of action which lead to the introduction of Cinerama, CinemaScope and 70mm with the extra addition of stereophonic sound. After the introduction of CinemaScope in 1953 several films were initiated in this format and many cinemas invested in the installation of new screens and banks of stereophonic speakers all around the auditorium as well as behind the screen. This was the beginning of a new era: Widescreen was here to stay! So people came back to the cinemas away from their small TV boxes.

In the sixties and seventies television became cheaper

and common place and a decade later the commercial channels exploded, bringing greater choices. Nowadays home cinema is becoming the next problem. Why should people go to the cinema, when they can see films on their widescreen TV, on their computer and on their laptop while travelling and even on their iPods and mobiles. Watching films this way has become an individual occasion, completely opposed to former days when seeing a film in a cinema was something of a social event – a sharing experience.

Why should people go to a cinema when some of these cinemas have transformed into lonely dark places with no friendly staff but only a few teenagers, who are not interested in their visitors.
Why should people leave their comfortable homes with large cinema screens to go to such a place?
They are used to the super quality of their CD and DVD equipment at home and will not go to the cinema for the sound experience only! With the increasing popularity of the Blu-ray disc and an expected price cut in the future, the quality and popularity of Home Cinema will only rise, leaving the cinema backward!

Cinemas have to find a way to encourage more people to visit their theatres! When a cinema is a sparkling place full of light and colour and soft music in the lobby and a café-restaurant with lots of tropical plants and a friendly staff then people will enjoy going there and hope to meet friends in the café, even when they are not going to a screening! Compared to the continually growing size of the home screens, cinemas should fight back with large screens and trying to create a great atmosphere, 'softly as in the morning sunrise'. The major answer is of course with new great films, a compelling story-line and convincing actors. People are becoming tired of all the special effects, loads of violence and CGI being uppermost in the producer's sights. We have seen enough battle scenes and cities destroyed by meteorites! Since the economic crisis however film companies are afraid of taking risks, instead of producing new exciting films, they like playing safe by producing sequels of old successful stories. For the time being 3D is a great example of getting people to the cinema, ***UP*** and ***Avatar*** in 3D have proven that 'The Force Was With Them' to attract a lot of new visitors. Nevertheless there is a lot to improve in scripts and story telling, to really entertain people.

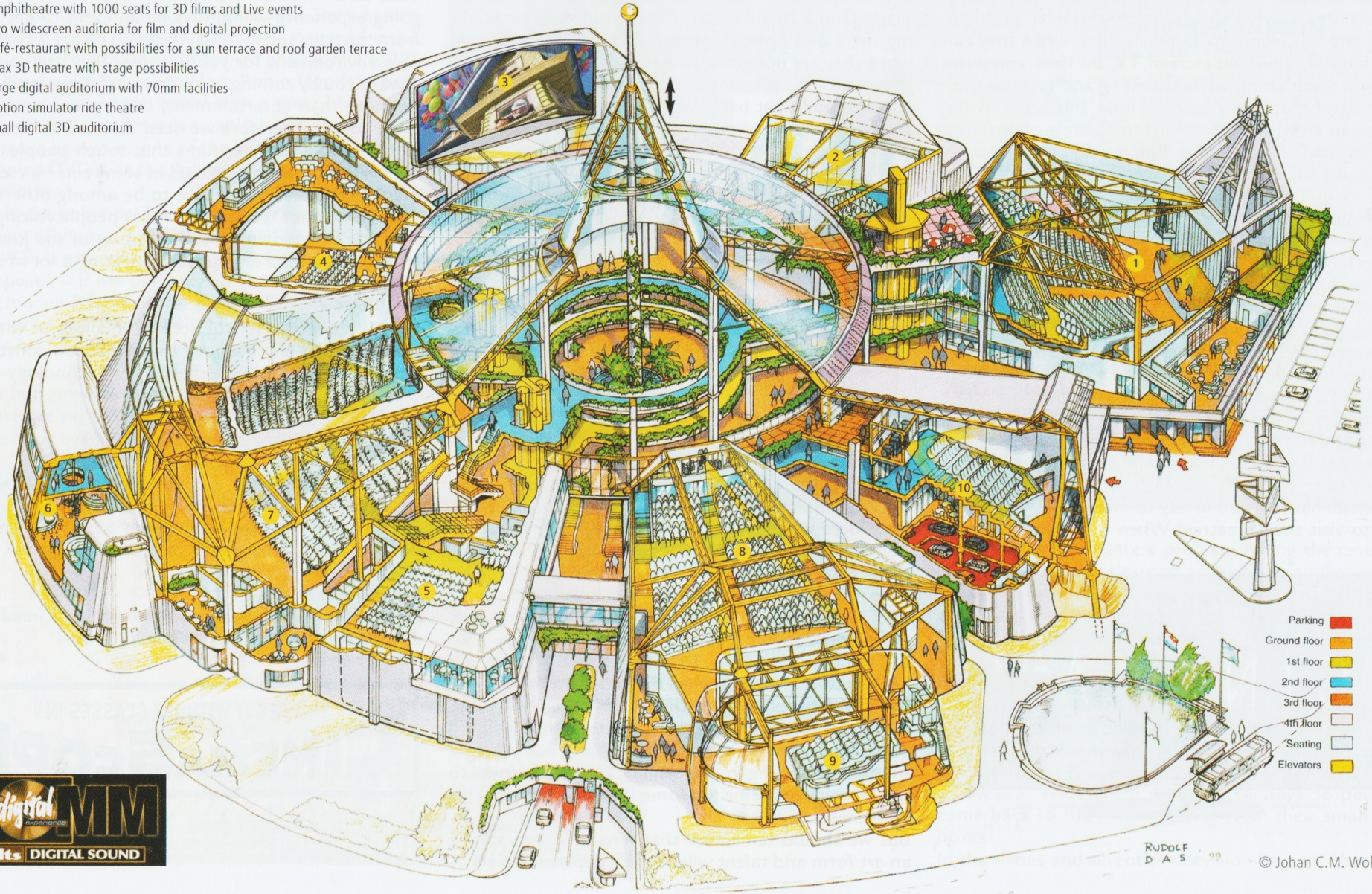
In 2009 Channel Four in the UK has broadcast different programmes in 3D, as a foretaste on the introduction of 3D Television. Sky TV has announced it will be the first station to broadcast in 3D in the UK. The industry hopes the year 2010 will be a break-through for 3D TV, especially in relation to the 3D registration of the World Cup Football and live transmitting by a lot of TV stations in Europe from South Africa! What will happen to 3D cinemas when the expectation of the industry will become reality that in 2014 there will be 15 million 3D television sets in the European homes! Will 3D cinemas slowly die than? Happily not everything is suitable for filming in 3D format, so we can expect to see 2D reign supreme for some long time to come on our screens.
But we should remember that film was, and still is, an art form and talent will never be replaced solely by Computer Generated Images! Computers can only be used as an extension of this form of art. The movie going experience will always be an event to get away from the daily sorrow and when you create a comfortable environment for your visitors, they are going to reward you by coming back. Successful movies should be more than entertainment, they must have something to say. Therefore we need talented filmmakers, who are able to make films that touch people. Why are small café's and cosy bars in some cinemas so successful? Because people like to be among others in a social ambiance. Why are so many people visiting film festivals all over the world? Because of the joint experiences and the ambiance of meeting a lot of other film lovers!

Film is the greatest story-telling medium of the last century and is is still among us, despite it is constantly evolving in the technical field. New technology however has never solved the human problems and many filmmakers like to make great movies on big sets, at real locations with real actors. We have to keep an open mind towards digital cinema, but should never forget that film is not only a business but also a very important form of art! On the TV supply and demand are completely different from the possibilities of the cinema. Film and cinema can learn and benefit from television.

Once Upon a Time there was: *Big-Time, Grand-Time Entertainment: 'You See It Without Glasses!'*

Cinema of the Future

1 Stage theatre for live performances, award presentations, musicals, etc.
2 Two small screens for classic 35mm film presentations
3 Amphitheatre with 1000 seats for 3D films and Live events
4/5 Two widescreen auditoria for film and digital projection
6 Café-restaurant with possibilities for a sun terrace and roof garden terrace
7 Imax 3D theatre with stage possibilities
8 Large digital auditorium with 70mm facilities
9 Motion simulator ride theatre
10 Small digital 3D auditorium



The Future: Digital - 3D - Live Events?

It is beyond doubt that the future of the home cinema will be digital and large flat screens.
But will the DVD be replaced by the Blu-Ray disc. Or will the dream for the future become 'streaming', online film viewing? Not for free, but at the moment you can see the experiments on the American site www.criterion.com and choose for a few dollars one of the fifty classics or recent films. And a lot of other sites are offering already a lot of films.

What about the future of the 'cinema'? No doubt we will enjoy the advantages of digital projection and sound from all corners of the auditorium! It is unbelievable that 35mm film projection has rendered so long as the ultimate form of film equipment. 3D has made a great jump forward with the outcome of James Cameron's science fiction spectacle ***Avatar***. Great images especially when seen in 3D, but a disappointing old-fashioned and poor story. Thank goodness the film is a tremendous success especially in the cinemas equipped with 3D, who spend a lot of money for the conversion to digital 3D.

One of the many problems we are facing is that the developments in the digital world of projection equipment will never be finished, just like the developments of computers. Once you have a 2K digital projection equipment you are facing the question, when do we want 4K? (The 4K technology provides an image resolution that is four times greater than 2K.) A sturdy 35mm projector bought in the sixties is still running nowadays with the old-fashioned 35mm film at low costs! These old 35mm projectors will stay with us for a longtime especially in the far corners of the world where they can't handle a digital projector! While some countries are jumping forward in their transition to digital, in a lot of European countries less than 5% of the cinemas have digital projection. The cost of installing digital equipment will still remain prohibitive for a large number of independent cinema operators. Even the largest cinema exhibitors think that they need another 3 to 5 years for the partly conversion into digital..

Till mid 2009 only 15 percent of the 40 000 Northamerican cinemas had acquired digital equipment from which 5 percent have 3D possibilities. From the around 500 new films that were produced in the USA in 2008 only two percent were in 3D. But that last number will rapidly be on the increase the coming years seeing the success of ***UP*** and ***Avatar***. Nevertheless watching a film through polaroid glasses causes the problem of loosing light and without the glasses you'll see a clearer image on the screen with more brilliant colors! And investigations have confirmed that watching a 3D film can be very tiring for some in the audience! Once we are used to the 3D technolgy the revenues will probably fallback, as long as 3D in different forms still need a pair of glasses for every visitor. In the Hollywood Reporter of July 2009 Rodney Charters, director of Photography says about the switch to digital cameras: "Film is still a superior system. I still believe it has a wider, more satisfying dynamic range and it's kinder to actors. But there are advantages to shooting digital – like the longer running time and real-time playback on the set." And even director Steven Spielberg has said: "Arts stimulate something inside of us. I'm going to direct all my films on film until they close the last lab down!" But that was long ago: in the March 2000 edition of Kodak's home magazine 'The Future of the Cinema'!

The financial discussion is continuing to slow down the digital market ever since the introduction of the digital projectors. A European study says that there is a possible cost reduction at the distributors side of 900 Euros per filmcopy when a digital copy is delivered instead of a 35mm film copy. Why shouldn't the distributors establish a foundation in which they pay on a regular base a certain amount of money which could be used for supporting those theatres with no financial possibilities to install or expand their digital projection. Especially non-commercial art film houses in Europe have problems, some of them have purchased a digital beamer some years ago subsidized by the government, which are now superseded by new technology. But there is still no light at the end of the tunnel concerning the digital roll-out!

Being a cinema owner in Europe, willing to keep up to date with all the technical improvements especially in the digital domain is not a simple task. He has to visit the Cinema Expo in Amsterdam or the European Cinema Summit in Brussel, the Medienforum in Cologne or Filmfest in Münich and needs many hours to attend all the panel discussions during these events about the digital future of the cinema and about the different 3D systems! And how many years will this hype of 3D go on? How long do we want to put an (extra) pair of spectacles on our nose? The Disney people seem to think it will stay with us forever. Is it a sign that Disneyland in Paris has lost 63 million Euro by the year 2009? The year 2008 was the only one with small profit after many years in red! But 3D will probably be with us in the cinema of the future for a long time and co-exist with flat projection and other digital products. In the meantime different forms of alternative content, such as opera from the MET in New York, live concerts and others have already become a significant part of the digital theatre programming, thus removing film from time to time out of the digital auditoriums, although these events are attracting a new kind of visitors to the cinema.

And what about 70mm? It was the only real improvement since the introduction of 35mm film! For a variety of reasons this 'high definition' 70mm format didn't make it into the 21st century despite it's popularity. Why not equip one of your larger auditoria in multiplexes with an up-to-date 70mm installation next to the digital projector so that also retrospective screenings with new prints of old classic 70mm films can be programmed.

How to Upgrade Your Cinema Presentation

In the early fifties the motion picture industry became aware they had to do something in the struggle against the coming dominance of the television. In 1952 ***This is Cinerama*** opened in New York and this 3-panel movie system became an enormous success!
In1953 ***CinemaScope*** was introduced, a process with anamorphic lenses that uses the normal 35mm film. And a lot of other *Scopes* followed. However, one of the financial backers of the Cinerama process, Michael Todd, understood that this 3-panel system was not suitable for general releases because of its complicated technique in the theatres concerned. He went searching for another process.
In October 1955 Todd proudly presented his Todd-AO 70mm process together with the World premiere of Rodgers and Hammerstein's ***Oklahoma!*** It was another boost for the emerging 70mm Roadshow presentations that would continue for nearly twenty years.

And what are cinemas doing today to attract people going to the cinema and away from their home cinema screen. Thomas Hauerslev (www.in70mm.com) wrote in the end of his report from the Berlinale 2009: "It is somehow ironic to visit a shop like Media Markt: really huge flat screens and high definition images everywhere you look. The consumer market is spending millions on marketing, telling us how good the home cinema experience is 'just like a cinema'. The same thing cannot be said about cinemas. I think cinemas can – and should – learn a lot from the consumer market and reinvent the cinema going experience.
70mm is one way of doing that. Cinemas rarely advertise how good an experience it can be to go to the movies. They take it for granted. No wonder the home consumer movie market is doing so well!"

Twenty years ago a beautiful cinema in The Netherlands (850 seats) had on its program a couple of 70mm screenings of the restored director's cut ***Lawrence of Arabia*** in the full splendour of 70mm with 6 channel stereophonic sound! During the intermission the cinema management had organised a great self service 'Oase' buffet in the large lobbies of the theatre. Everybody enjoyed the meal and most of the 3 performances were full houses. The visitors were of all ages, young and old and altogether it was a great happening in a very pleasant house. Next to this film & buffet performances they also had a couple of normal 70mm screenings of the same film without dinner.

In October 2008 we visited the yearly 70mm festival in the German city Karlsruhe. The management of this theatre had also organised some interesting activities: at nine o'clock in the morning there was a breakfast for the festival visitors in the lobby and at the end of the afternoon they presented a simple Italian meal. All this to please their guests and this was highly appreciated as you can imagine. Some time ago, here in Holland we attended the Dutch premiere of ***The Kite Runner*** in a new beautifull 8 screen cinema complex called CineMec with a large lobby. Before the screening started there was an interesting verbal introduction in the front of the auditorium about Afghanistan and in the lobby was a small exhibition of art from this country. After the film show the management had organised snacks and drinks which were included in the price of the tickets, that were only a few Euros higher than normally. Meanwhile people could watch the art exhibition in the lobby. In the Dutch city of Nijmegen there is a four screen cinema, with on the ground floor, a large Grand Café. It is always full of people, you can sit there before or after your visit to a screening ! All of these theatres don't sell popcorn, they sell tea and coffee with apple pie or soft drinks and there is plenty of space to take a seat.

Organising a buffet with a film performance is not easy, but when you have a lobby you should not only sell drinks, but also simple snacks such as apple pie or something similar. But please, no popcorn! In live theatres you will hardly find popcorn, because it degrades your image!

During the holiday season the European TV channels with BBC on top are trying the utmost to attract viewers to watch their tv programs. And what is most attractive to the audience: Old classic films like ***The Sound of Music***, ***West Side Story***, ***My Fair Lady, Lawrence*** of ***Arabia***, etc. Mostly musicals and often 70mm classics! On the radio there is always one popular channnel that is pleasing it's listeners year in, year out with the 'Top 1000 most favourite songs of all time'! In the winter days people do listen to these classic songs with great fondness. What are cinemas doing in winter time to attract people out of their homes to their theatre? Are they offering some classic

movies. No they leave that to the TV companies. They do nothing more than screening the films they are offered by the release companies, with more or less success. And no one thinks of organising a special holiday program with a screening of an all time classic movie.

And again a quote from Thomas Hauerslev, who wrote: "In my opinion, the major film studios should realise, that showing their classic movies in the cinema should be fair-priced for these cinemas, as it is a 'display window' for the home theatre (where they make the BIG money) – a win-win situation for both parties!"

Some ideas for cinema managers who are looking for new ways of entertaining their visitors during the Holiday Season: Organize 2 or 3 special screenings of the favourite classic film ***The Sound of Music***. Contact a local music school and explain that you want to do something special, you would like a children's choir to sing some songs before the screening starts, during the intermission and after the film. The children's choir could also go into the auditorium and watch the film and sing a song when they are leaving at the end of the film. To reduce the reward for the choir you could offer them some free tickets for other film performances. The same could be done with one or more screenings of ***West Side Story*** with students from a music school nearby.

Or you could program a special screening of ***Ryan's Daughter*** and organise a painting contest with enthusiastic amateur painters. Let them choose between a beach side painting or a village or both. Ask them months before the screening and try to get the first paintings in your local newspaper before the day of the screening to get extra publicity!
Combine the screening of the restored new print of ***Flying Clipper***, (that had its premiere at the Berlinale 2009, during the *70mm Retrospective*) with a cosy Holiday Fair in your lobby where Travel Agencies can make promotion for their product and each Agency has to dispose at least one prize. Or imagine that you are screening ***Mamma Mia*** the Abba musical with Meryl Streep and your audience is leaving the auditorium at the end of the film into the lobby where a choir invites them to sing along the songs from the film. And a grand piano in the lobby will also enhance the atmosphere when someone is playing well known filmmusic!

The Everyman Group, one of Britain's first chains of all-luxury cinemas have a prophecy which says: "Basically what we are about is re-inventing these venues in their locality as THE place or THE destination for entertainment, which is what cinemas used to be!

That's where the opportunity in the (cinema) market is." They think their patrons like it to have a drink and a full meal together with the movie experience in the same building which is near an underground station so they have no problem with finding a place to park their car!
They sell NO popcorn but a rich choice of roasted cashew nuts, marshmallows, chocolates, coffee and tea, fruit juices, spirits and wine. They are also involved in different forms of alternative content such as live opera from the Metropolitan Opera in New York, live concerts, Q & A by satellite with members of the premiere screening of a new film, etc.

Some cinema staff hold personal introductions to the film, welcome their visitors and wishing them a pleasant evening. Very simple, very short, but it gives the performance just that extra that they will remember.

Another idea to promote the refreshment sales during the intermission: Have your patrons order and pay for their drinks before the screening starts: they receive a numbered ticket with which they can get their drinks in a few seconds when the intermission arrives. No hassle! The drinks are on numbered trays on a large table or on the bar. It saves time and it is a proven fact that sales are much higher when visitors have not to wait in line during the intermission.

Expand and decorate your performances and ensure your staff are friendly to your visitors! The 'classic' ambiance of the cinema should return! Trendy bars, visitor friendly lobbies in modern colors with on the walls framed movie posters or art. Another very important issue which is often neglected: clean toilets with no dark corners. And of course a cinema management who cares for their customers with excellent projection images on the large screen, a friendly staff with a competent projectionist and a clean attractively decorated auditorium with comfortable seating.

A useful and workable combination is a cosy café, with drinks and simple meals, on the ground floor, where a piano player on a grand piano creates a social atmosphere and people love to go there meeting friends, even if they have not planned a visit to a screening.

A lot of these special performances are only possible on some days a year. I hope that you will pick up one of these many ideas. But the principal motive of this story is that you have an open mind for new ideas and that you try to upgrade your performances!

65mm Origination and 70mm Presentation in Contemporary Motion Picture Exhibition

Abstract

In today's era of digital cinema it may seem anachronistic to focus on mature film technologies as a basis for innovation in the related fields of film production and exhibition. However, simplistic assumptions about the preferences of audiences and the extent of acceptance and dominance of new technologies belie the possibility of continuing demand for traditional technologies due to their unique properties. This Paper questions the dominant belief that digital acquisition and presentation of movie content will entirely supercede motion picture-based film production and exhibition. In particular, it posits a different and innovative approach to large-screen presentation in the cinema, and summarises several related technical proposals.

The history of technological progress in the entertainment industry is not rigidly linear but moderated to some extent by personal preference. A well-known example is the market for vinyl records. Despite the overwhelming dominance of the compact disc format, and latterly, internet downloads, the market for 7-inch vinyl records accounted for two-thirds of UK singles in 2007, with sales up five-fold in the 5 years preceding. *(Back in the groove; young music fans ditch downloads and spark vinyl revival by Katie Allen, in The Guardian, 16 July 2007)*. What accounts for this survival of an analogue format that should be obsolete? Vinyl fans cite the warmer, more nuanced sound quality over CDs and MP3 files and appreciate the tangible nature of the medium. *(Vinyl Gets Its Groove Back, written by Kristina Dell in TIME, 10 January 2008)*

Similarly, analogue motion picture film has unique properties that appeal to the viewer in ways which are difficult for digital technology to emulate. For example, in the BKSTS Bernard Happé Memorial Lecture of 2004, *The Film Look: Can it Really be Defined?,* Peter Swinson FBKS portrayed, with regard to film projection, the relaxing effects of slight motion and interruption of the image on the subconscious of the viewer, allowing them to more readily 'believe' what was being presented on screen. He also described key attributes of the random grain structure in the film image that lead to film's wide latitude, dynamic range and ability to represent very fine tonal gradations. The important phenomenon of Stochastic Resonance – the presence of random noise in an image allowing the brain to resolve more subtle detail and more sharpness – was further explained. *(Image Technology, January, February and April 2005)*.

These fundamental and positive attributes of motion picture film, and its unique exhibition process (mechanical transport with interruptive shutter), mean that it is incorrect to claim direct equivalence by digital video emulation, no matter how sophisticated such processes might be. The projected 'film look', different to that of digital video, also enhances the difference between home entertainment and theatrical exhibition. If there is still a place for film in today's cinema environment, then what shape could it take? A common mistake made by sceptical observers is to assume that advocates of film acquisition and projection wish to 'roll back progress' and to return to a hypothetical 'all-film' world. This fails to acknowledge the complexity and diversity of the tools available

for production. A useful analogy is found in the art world, where modern acrylic paints, for example, have not superceded oils or watercolours, but have merely added to an expanding palette of options available to the artist. Likewise in music, the development of electronic instruments of increasing sophistication over the years has not in any way led to the diminution or extinction of their traditional counterparts.

Combining High Resolution and the Film Texture: 65mm Production

The traditional 65mm format provides a compelling trajectory for developments in the mature film technology area, especially as theatrical audiences become more demanding of technical quality, and as HDTV and Blu-Ray penetrate the home viewing environment. Cost is regularly cited as a perceived barrier to a revival of the traditional 5-perf 65mm format for big-budget productions. However early research by the 65/70mm Workshop discounted this. For example, a 1992 *Variety* article on ***Far and Away*** (filmed in *Panavision Super 70*) quoted its producer Brian Grazer as stating that the additional cost of shooting the film on 65mm was relatively small at $ 700,000. With a quoted budget of $ 45 million, this figure represented just 1.6% of the total cost. *(Variety 18 May 1992: 'The Future of 65mm is Fuzzy', by Richard Natale and Screen Digest of June 1992: **Far and Away**: 'Test Case for 65mm Film'.)*

The later 1996 release of Kenneth Branagh's version of ***Hamlet***, also shot on 65mm, was supported by a promotional brochure published by Kodak Professional Motion Imaging. In the brochure, former Managing Director of Technicolor (UK) Ltd. Bob Crowdey stated: "As film budgets get bigger, the small increase to the overall cost of production using the larger format becomes a smaller percentage. In marketing terms, the added value of the superior picture quality easily outweighs the small cost increase". *(Kodak Professional Motion Imaging: 'Kenneth Brannagh's Hamlet on 65mm')*

Confidential figures for 65mm negative processing, telecine and 70mm printing obtained by the Workshop from a leading laboratory in 2007 corroborated these earlier views. Using the more current figures, the additional cost of shooting on 65mm over regular 35mm for big-budget films was estimated at between 3% and 5% of the total budget, including the cost of additional camera and lighting equipment. This did not include CGI; however the cost of high-resolution effects work is falling, and there is an argument to be made about re-visiting the crafts of traditional physical model-making and matte painting. *(Filmgoers are sometimes critical of CGI for its lack of realism, whilst there exists a corresponding nostalgia for traditional model-making and make-up techniques. This was drawn upon in the recent science-fiction feature film **Moon** [UK 2009], which made a point of its use of traditional modelmaking and matte paintings.)*

Indeed the development of lightweight camera designs since the early 1990s such as the Arri 765, the Panavision System 65 and most recently the 3D Consortium /MKBK 65mm camera has greatly helped overcome popular misconceptions about 65mm equipment related to perceived bulk and weight. *(A new 65mm Camera, Jonathan Kitzen, www.in70mm.com).*
Perceptions of high cost are further countered by the recent use of the 15/70 IMAX format in ***The Dark Knight*** (2008) and in ***Transformers: Revenge of the Fallen*** (2009). This innovation is notable not just in itself, but also because the 15/70 format uses three times as much film stock as traditional 5-perf 65mm. (Significantly also, the 2008 French drama ***Faubourg 36*** was premiered in a high-quality 70mm DTS blow-up print at the behest of its Director, illustrating the point about incorrect perceptions of cost).

Hamlet, being the last commercial release in 65/70 mm, further showed how impressive and beautiful film shot in 65mm and presented in 70mm can look,

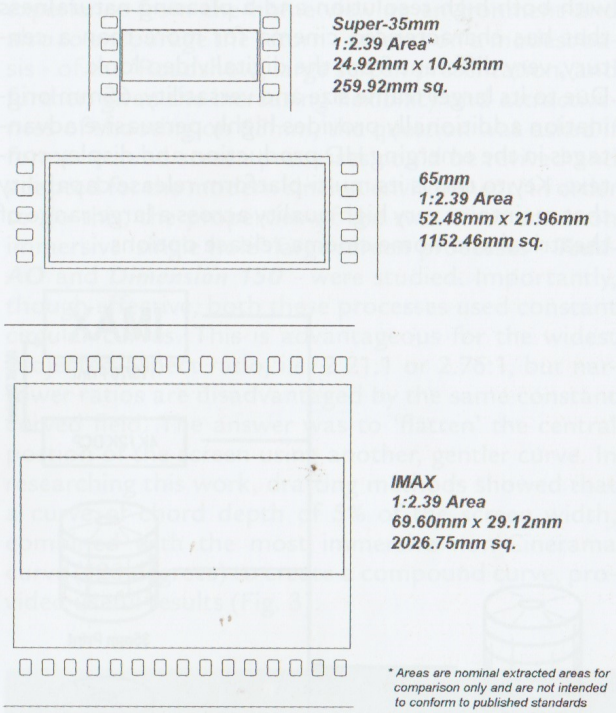


Fig 1. Nominal image area comparison, 2.39 ratio: Super-35mm, 65mm and IMAX

ENLARGEMENT PROCESS	MAGNIFICATION FACTOR
S-35mm to IMAX	7.8
65mm to IMAX	1.8
65mm to 70mm	1.0
S-35mm to 70mm	4.4

- 1:2.39 aspect ratio used for comparisons -

with both high resolution and a pleasing naturalness that has characterised cinema for more than a century, very different from the digital video look.
Due to its larger frame size and versatility, 65mm origination additionally provides highly persuasive advantages in the emerging HD production and display context. Key to this is its multi-platform release capability that maintains very high quality across a large range of theatrical and home cinema release options.

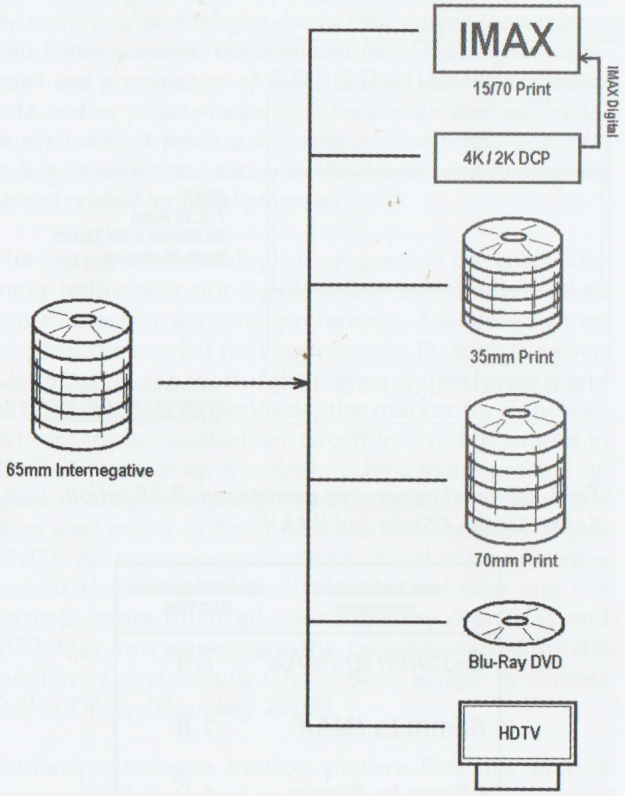


Fig 2. 65mm offers high-quality multi-platform release capability

Fig. 1 and the accompanying magnification chart show how shooting on 65mm permits straightforward release on the 15/70 IMAX format (with a relatively low magnification factor and theoretically higher quality compared to the current 35mm-based IMAX digital re-mastering [DMR] process), along with the added advantage of being able to make limited quantities of traditional '***Roadshow***' 5/70 prints.

The 65mm negative also yields far higher quality on conventional 35mm prints as the negative is over 4 times greater in area (referenced to the 1:2.39 aspect ratio), and critically, also offers an extremely high resolution source for both 4K and 2K digital cinema platforms (including IMAX Digital), as well as downstream domestic HDTV transmission and Blu-Ray Disc release. It is not too surprising that major consumer and professional audio-visual electronics manufacturers regularly showcase 65mm-originated material to demonstrate the capability of their display technologies. An example is the recent Blu-Ray transfer of ***Baraka*** (a 65mm production that was released widely in 70mm). Across this wide spectrum of release options, with its ability to offer and maintain very high image quality, plus its important archivability and film-based advantages, 65mm film is a realistic option for visionary filmmakers (Fig 2). In addition, the format is 'tried and tested' with extant infrastructure and work practices. Non-anamorphic 65mm also offers filmmakers who do not like to work with anamorphic photography the opportunity to have a wide image without having to sacrifice film resolution, as with the current Super-35 format.

'Niche' Distribution

On the exhibition front, industry commentators often wrongly dismiss any possibility of a return to the use of the 5-perf 70mm format by incorrectly assuming that the only distribution model possible is the former large-scale release practice dating from the 1950s onwards. Striking several hundred prints is seen to be uneconomic and such critics further point to the smaller remaining installed base of 70mm projectors worldwide.
Whilst this is true, it fails to consider other distribution methods that might be practical, involve far less cost and which would tailor release to the smaller installed base of 70mm-equipped theatres. In 2008 the Workshop developed a 'niche' distribution model that fits in well with a more informed understanding of film exhibition as being diverse and able to accommodate a range of viewing formats simultaneously. As mentioned, a 65mm-originated production can yield limited quantities of 70mm prints. In the contemporary context, the perceived need for 'hundreds' of such prints is avoided by re-positioning the 5/70 format as a specialist '***showcase***' platform for the title in question.

In this scenario, only small numbers of prints would need to be struck for a territory, initially for pre-release screenings, using a 'Mini-Roadshow' concept previously trialled successfully with conventional 35mm releases in locations such as New York.. The Mini-Roadshow concept acts to build excitement and generate word-of-mouth, whilst also permitting higher ticket prices. Typically, the Mini-Roadshow 'pre-release' may occur three weeks prior to the normal wide 'day-and-date' release. *(Is There Any Showmanship Left ? www.film-tech.com Film Handler's Forum, 24 July 2008).*

Pre-release screenings on their own are unlikely to justify the striking of 70mm prints, even today with DTS sound eliminating the need for magnetic striping. Accordingly, most prints could be crossed over to a new set of locations at the time of the day-and-date release, then crossed over to a subsequent set of venues later, thus maximising the revenue-earning life of the prints. Prints could see further life at ***70mm festivals*** and other special shows, 'asset sweating' the investment by the studio / distributor. Additionally, the DTS format readily permits the production of audio tracks

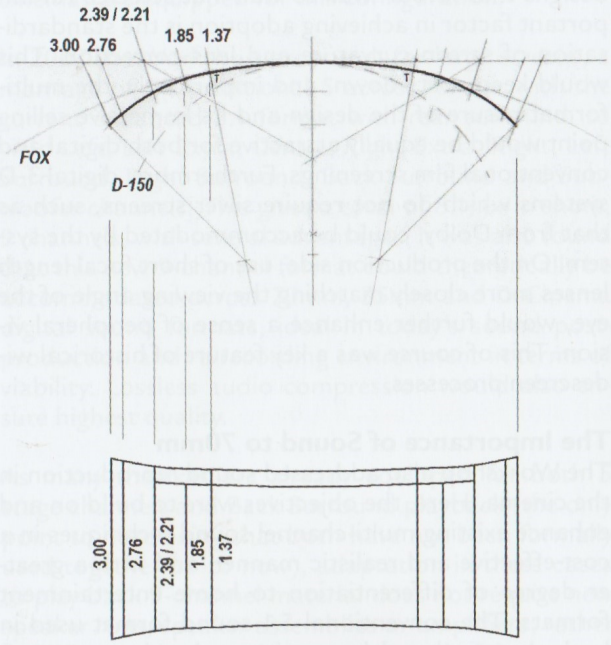


Fig 3. Compound curved screen design developed by the 65/70mm Workshop accommodates ultra-wide aspect ratios such as 3:1 Vistamorph and 2.76: Ultra Panavision, as well as standard 70mm, 35mm and digital formats

for different markets without entailing striking more prints, as well as facilitating electronic projection of subtitles where desired.

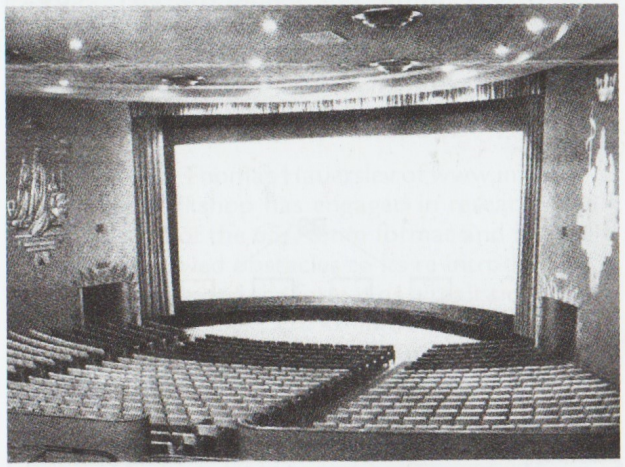
Designing a limited distribution model for small numbers of 70mm prints made from 65mm-originated material must take account of the fact that studios/distributors are highly unlikely to accede to any additional expenditure on prints, even if such expenditure would be relatively low in the context of typical overall P&A (Prints and Advertising [*]) spend on a major title .However one way of addressing this is to examine where savings could be made in other areas that could offset the small additional cost of striking 70mm prints. [*] *(Based on average UK P&A costs of £ 1.8 million quoted in Deborah Allison's 'Multiplex Programming in the UK: the Economics of Homogeneity'. Screen 2006: Oxford University Press).*

Limited 5/70 exhibition is in fact an advantage as it suits the higher quality control, film handling and projection standards both the format and audiences demand. Venues could be accredited, and would not be eligible to receive prints unless they fulfilled a set of accreditation criteria. Comprehensive training could be arranged at cost and allied to the accreditation process. The IMAX release of ***The Dark Knight*** on 15/70mm showed that audiences appreciate the quality a larger negative with larger prints produces. Neither the film trailers nor the film ads had any mention of the impressive IMAX scenes, yet audiences flocked to the IMAX screenings, even travelling long distances to do so. In particular, more mature audiences who are tired of the multiplex experience could return to the cinema if – again – it had a truly theatrical feel.

Compound Curved Screens

As part of its work, the Workshop has put forward improvements to the viewing experience, particularly in the context of the larger image sizes possible with 70mm and with the goal of achieving greater immersion. As in the past, replicating a sense of peripheral vision was a key objective. A common technique for curved screens is to use either a chord depth of 5% of the screen width, or to curve to the throw, or to curve via ray tracing according to the requirements of gain screens. Whilst all these methods enhance screen luminance (a common reason for their use today) and provide an aesthetically pleasing curve, they do not offer the immersiveness of former curved screen processes such as those employed by ***Cinerama, Todd-AO*** and ***Dimension 150***.

With the increasing need to differentiate the cinema experience from the home viewing environment and also to encourage the return - at least on a modest basis - of the 'Roadshow' large screen presentation, and further, given the increasing flexibility and attractiveness of shooting on 65mm, the question was asked if former curved screen processes could be revived and adapted for the modern cinema environment. In order to do this, the properties of the two most common immersive 'single hole' large screen processes - ***Todd-AO*** and ***Dimension 150*** - were studied. Importantly, though effective, both these processes used constant circular curves. This is advantageous for the widest projected aspect ratio, i.e. 2.21:1 or 2.76:1, but narrower ratios are disadvantaged by the same constant curved field. The answer was to 'flatten' the central portion of the screen using another, gentler curve. In researching this work, drafting methods showed that a curve of chord depth of 5% of the screen width, combined with the most immersive non-Cinerama curve (120 degrees) to create a compound curve, provided useful results (Fig. 3).



Coronet interior in San Francisco is pictured here in a view of deeply curved Todd-AO screen. The Coronet screen was 49 feet wide and 24 feet high.

Interestingly, use of compound curves was recommended by Philips in the 1960s. *(Planning a Cinema, 1960, Philips, The Netherlands)*. In this case they recommended a parabolic curve for multi-format 35mm/70mm screenings. However it must be noted that the parabola, being an inclined section through a cone, achieves its greatest curvature at its apex. This again goes against the desire for a flatter field for narrower aspect ratios in the central portion of the screen, so that a compound curve of increasing radius towards the edges rather than the centre appeared to be a better choice of geometric form. The transition point between the two curves was chosen via drafting as the on-screen boundary of the Academy Sound (1:1.37) ratio. There could be a more scientific way of choosing the transition point, but it could also be argued that there is an element of aesthetic choice involved. A fixed transition point was deemed to be necessary if the screen design were to be popularised. Some former curved-screen projection processes required lenses tailored for each venue. However in today's cost-conscious era, such practices are unattractive. A compound curved screen design overcomes the problem by limiting the required correction only to the widest ratios (i.e. 35mm 'Scope, and 70mm'), and furthermore, involving only a standard correction method by tying the screen curvature transition to an unchanging point proportional to the screen width. Also, since the curves can be mathematically derived from the screen width, screen size is not a limiting factor. Lenses for the wider ratios could be provided with greater depth of focus to accommodate the deeper curvature towards the screen edges. In 2008 lens manufacturer Isco-Optic GmbH confirmed that the design would work with lenses of 55mm focal length and upwards, and apertures f2.2 and f2.4. *(Information courtesy AVCOM Ltd. London)*

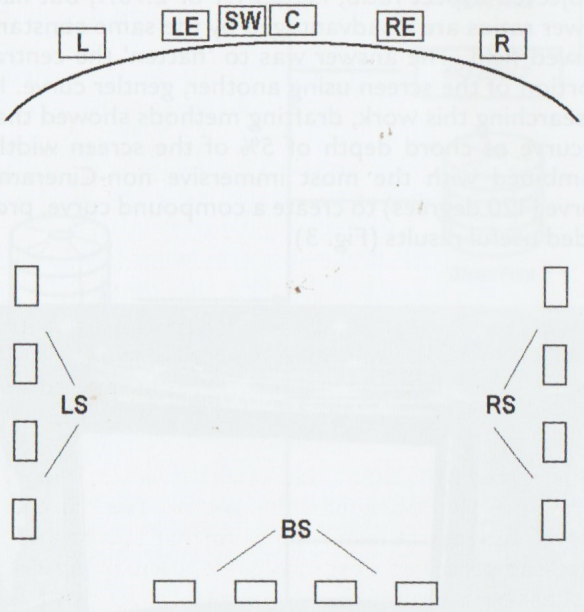


FIG 4. 9-channel (8.1) sound system configuration

A compound curved screen design also greatly minimises cross-reflection as the central portion is flatter and the deeper curved sections are well separated. Screen manufacturer Da-Lite Inc. further recently confirmed that no cross-reflection would occur with this design provided a matt white surface was used. In order to reduce peripheral perceived image distortion on the part of the viewer, seating layouts used with the design would be curved or angled, which in any case is in line with best practice in cinema design. Conveniently, the design would also make it easier to accommodate wider aspect ratios than today's, such as 3:1 Vistamorph ®. This is because a curved screen design inherently has a shorter linear width for a given ratio than a flat screen does. By extension, this means wider ratios can be accommodated without the need to greatly expand laterally, and thus makes it easier to incorporate such ratios into current cinema auditorium designs that favour 'wall-to-wall' flat screens. An important factor in achieving adoption is the standardisation of screen curvature and lens correction. This would keep costs down, and importantly, the multi-format nature of the design and its immersive selling point would be equally attractive for both digital and conventional film screenings. Furthermore, digital 3-D systems which do not require silver screens, such as that from Dolby, could be accommodated by the system. On the production side, use of short focal length lenses more closely matching the viewing angle of the eye, would further enhance a sense of peripheral vision. This of course was a key feature of historical widescreen processes.

The Importance of Sound to 70mm

The Workshop also addressed sound reproduction in the cinema. Here, the objectives were to build on and enhance existing multi-channel sound techniques in a cost-effective and realistic manner, and with a greater degree of differentiation to home entertainment formats. The conventional 5.1 sound format used in both theatrical and home cinema has been very effective in dramatically improving the audio experience in the cinema and home viewing environments, being refined in recent years with the addition of the back (or rear) surround channel.

However, of course 5.1 is not the only multi-channel sound format that has been developed for theatrical use, and in large theatres, the advantages of 5 stage channels, with additional Left Extra and Right Extra information, and a Centre that can be kept free from music and effects, have been known since its advent with Cinerama in 1952. The '5 across' configuration gives better spatial audio experience in large theatres, as the additional Left Extra and Right Extra channels fill the aural 'holes' between the Left and Centre and Right and Centre screen channels on very wide screens. The 5 across configuration has also been used on several 35mm SDDS releases over the years, and many

cinemas are equipped for this configuration.

In 2007 the Workshop proposed, for large screens, a marriage of the traditional 5 across format with the current enhanced 5.1 format with rear surround, to yield Left, Left Extra, Centre, Right Extra, Right, Left Surround, Right Surround, Back Surround and Subwoofer channels. This gives a total of 8.1, or in short, 9 channels, with several advantages. It was also found that this new 9-channel format could theoretically be accommodated across 70mm, 35mm and D-Cinema digital sound formats, ideal in today's sound post-production and re-recording environment in terms of viability. Lossless audio compression would also ensure highest quality.

As many theatres are already equipped for both 5 stage channels and Back Surround playback (the only point to note being that both have not been formally used together up to now), adaptation in these cases to play back 9-channel material does not require new speaker runs, speaker assemblies or amplifiers; rather modifications only at the processor end of the system. It was not within the scope of the work to detail exactly how such upgrades could be done, but merely to point out that it should be possible and was worthy of consideration. 70mm audio and certain 35mm audio formats are theoretically upgradeable to 10-channel reproduction, whilst digital cinema accepts up to 16 channels under DCI.

The proposed 9-channel layout is shown for reference in Fig 4. Since a 9-channel mix must also be reproducible in a 5.1 theatre, processors would have to include a 'fold-down' function so that the Left Extra, Right Extra and Back Surround channels could be mixed into the 5.1 envelope on playback. Alternatively both mixes could be included on discs or hard drives as sent to the cinema. A final consideration was archivability. Fortunately, it is possible to record up to 10 tracks of audio to 35mm fullcoat magnetic film using the specialised '8+2' head and track configuration. This uses 8 sound records across the magnetic film between the perforations, with an additional track outside the perforations on each side.

It was concluded that adoption of 9 channels as a new choice for mixing and theatrical reproduction provided the following advantages

- Superior spatial reproduction across the large screens increasingly used in multiplex and other cinemas;
- Excellent dialogue clarity as the Centre channel can be kept free of Music and Effects;
- All the advantages of three Surround channels as found on selected 35mm and digital cinema releases;
- Enhanced enjoyment for audiences, with greater artistic possibilities and quality;
- Applicable across 70mm, 35mm and digital cinema formats, making economic sense;
- Relatively easy to implement whilst not precluding addition of more channels in the future;
- Theatrical format only, providing greater differentiation to the increasingly sophisticated home cinema offering and thus encouraging audiences to choose the theatrical cinema option;
- Facilitates increased use of the 70mm format for limited 'Roadshow' style engagements of 'tent-pole' releases.

Conclusion: Why Should Studios Invest in 65/70mm?

65mm film provides a compelling, high quality origination medium in an era of high-resolution content, offering all the advantages of film whilst providing a unique multi-platform release capability.

A limited return to 70mm presentation offers exciting new technical advances and marketing opportunities for selected cinemas, with the format re-positioned for specialist showcase/Roadshow screenings. In engineering terms, 70mm is also far more appropriate for many large screens that are currently 35mm/digital only.

Piracy has become a serious problem for the industry in recent years with very damaging consequences. Illegal copying or downloading of films is often not perceived as wrongful by the public, and digital technology has made the practice far easier.

One solution would be to keep ***Roadshow 65/70mm*** films in the photochemical domain only, with no digital versions made available, for the three first weeks of the Roadshow release. With the soundtrack audio on a separate disc, and the film on 70mm reels, a pirate copy may prove difficult to make.

Moreover, a 65/70mm production with high production values, and cinematography designed for the big screen rather than the TV screen, would greatly enhance the theatrical experience as compared to that found in the home cinema environment.

2009: The UK-based 65/70mm Workshop was started in 2006 by 70mm proponents Brian Guckian, Ramon Lamarca Marques and Mike Taylor (www.in70mm.com/workshop/index.htm).

Supported by Thomas Hauerslev of www.in70mm.com, the Workshop has engaged in research and development of the 65/70mm format and has addressed perceived obstacles to its re-introduction. It has re-positioned the format as a realistic choice for filmmakers, in today's exhibition environment.

Workshop sessions were held at the annual Widescreen Weekend in Bradford UK in 2006, 2007 and 2008, and the Workshop gratefully acknowledges the ongoing, invaluable support of www.in70mm.com and the Widescreen Weekend.

The Potential of Vistamorph®

by Chris O'Kane

There exists today a substantial market for large format cinema. These cinemas sell the thrill and experience of a big show where films entertain and educate the audience for 40 minutes with short films and over 2 hours with commercial feature films. The large format ***Imax®*** system has its films originated on 15-perf 70mm horizontal film at great cost and synced up with a powerful surround sound system. The concept is to convey a sense of realism to the audience, as if they are physically involved in the film through the use of scale and power.

This idea stems from *Cinerama*, launched in 1952. Cinerama made such an impact in the industry that all wide screen film systems were developed as a consequence of the very great public response to the Cinerama experience.

The *Vistamorph* film system was developed by Vistatech Ltd. as a response to the rising costs of large format film production and presentation in the late 1990's. It was envisaged that it could fill the role that Cinerama once had in commercial cinema and offer a much lower cost alternative to 15/70 formats as a medium. Vistamorph is a process that can produce spectacular wide screen films and emulates Cinerama in scale. One of the many benefits of Vistamorph is that it utilises existing motion picture technology to produce films at a reasonable cost in comparison to 15/70 films. Vistamorph has a presentation ratio of 3:1 to 1 or greater and is originated on 35mm motion picture negative stock. It incorporates a x2 anamorphic optical compression along the horizontal axis of the film stock and is shot in a *VistaVision* format camera. A range of prime lenses can be coupled to the Vistamorph anamorphic attachment lens for originating wide and medium fields of view.

In March of 2000 a short test film was shot using a Technicolor model camera from Panavision and a Nikon prime lens coupled with a x2 anamorphic attachment. The film *A Trip to Dunoon* was shot in good daylight on Eastman Kodak EXR 50D 35mm stock, on the west coast of Scotland in early spring and consists of several shots of moving boats, vehicles and people in a rural landscape.

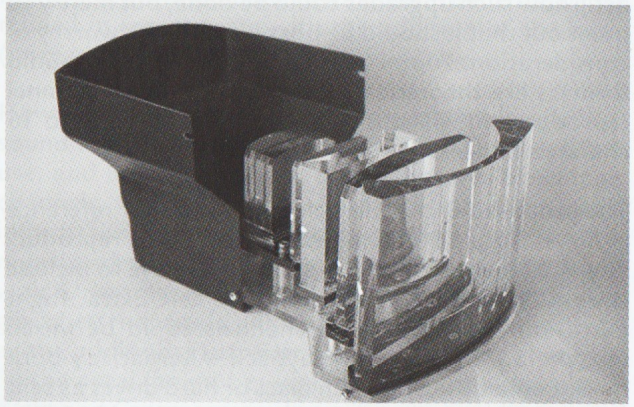
The film also includes moving camera shots. This was done to test for strobing problems in theatre viewing. These proved to be minimal and non intrusive for the audience. A 70mm Vistamorph projection print was produced by Technicolor using existing Technirama printing equipment.

The test film was run on a DKP75 Kinoton projector with a 3K lamp and shown on a 56ft Todd AO screen where the aspect ratio exceed the width of the screen at 3:1. The film was also test run on the ***Pictureville Cinerama*** screen in Bradford UK and on the 96ft Cinerama screen at the ***Martin Cinerama*** Theatre in Seattle, where the aspect ratio of the screen was exceeded also. This was done using a medium focal length backing lens attached to an industry standard x2 anamorphic with a 7K lamp as a light source. The development of better lenses and cameras would further improve the quality of the Vistamorph process and make it a viable system to produce super-widescreen motion pictures. The costs to do this need not be excessive as some existing equipment could be adapted for the purpose.

The *VistaVision* negative format lends itself to fitting in with existing printing techniques. Fotokem and Gulliver labs can produce either a 70mm or 35mm anamorphic print from the Vistamorph negative and DTS can produce a surround sound track for the film. A multiplex cinema could knock two large halls into a large one and build within it a Vistamorph auditorium that would allow the screening of, not only Vistamorph 70mm format films, but also all existing 70mm, 35mm and future digital formats too.

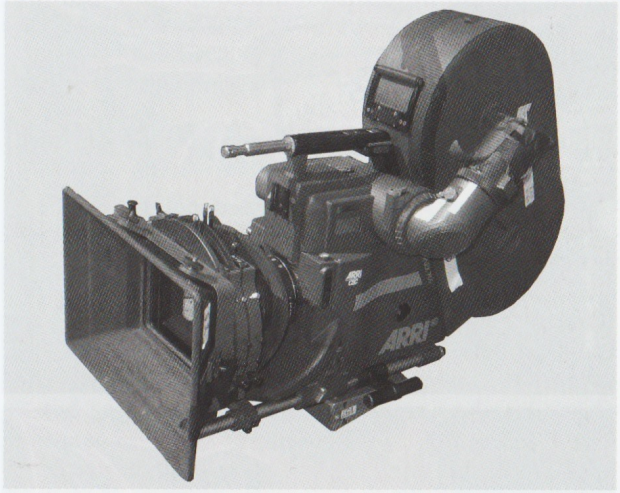
Vistamorph requires at this stage a three-phase development

Phase 1: Production and testing of a full-scale prototype system and test film.
Phase 2: Production of new equipment for filmmaking and the building, or adoption of an existing theatre as a Vistamorph auditorium in a popular location.
Phase 3: Establishing the concept worldwide.

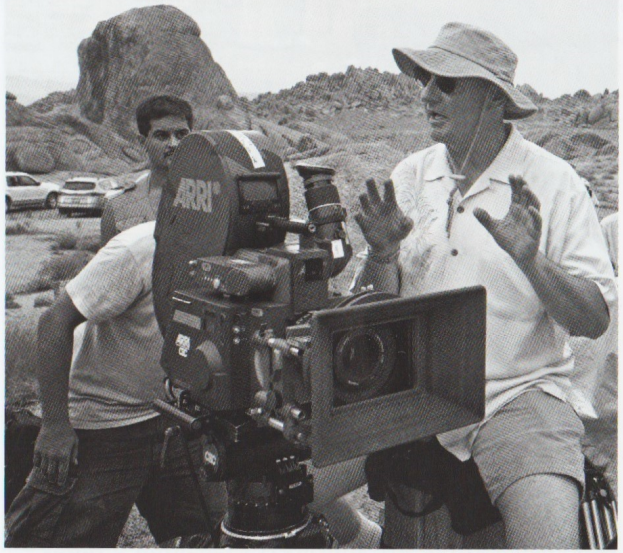


Vistamorph® camera under development. © Chris O'Kane

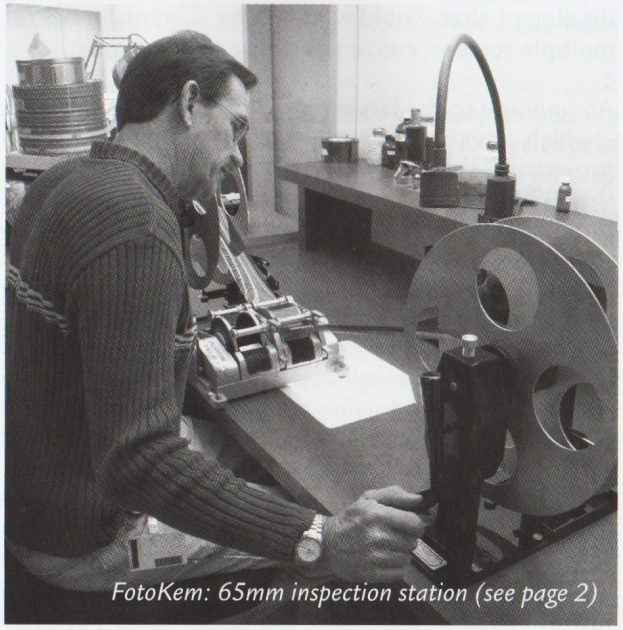
Modern 65mm Cameras and Equipment



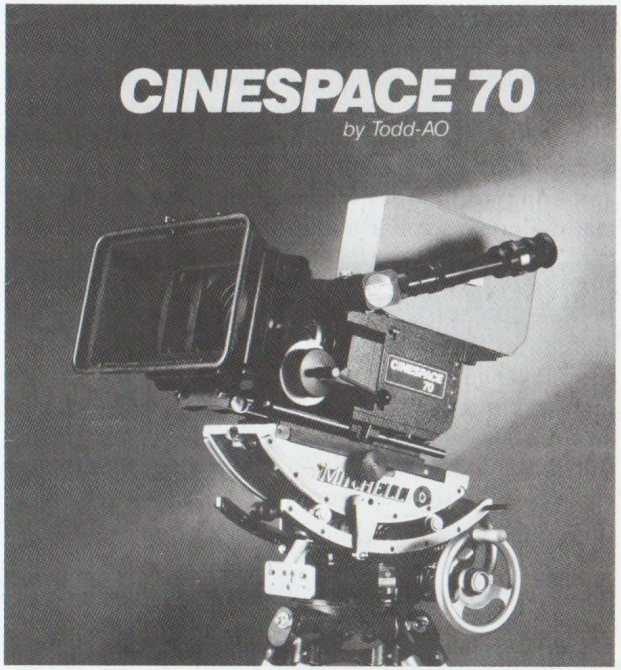
Cinematographer Bill Bennett, ASC with ARRIFLEX 765
(see page 50)

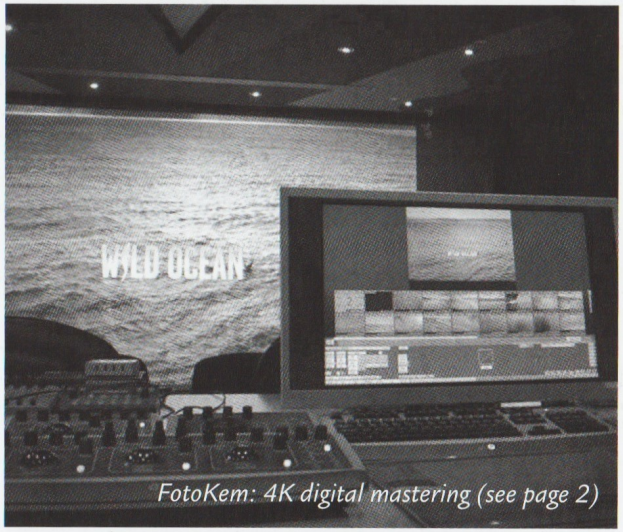


DOP Johan Wolthuis



FotoKem: 65mm inspection station *(see page 2)*





FotoKem: 4K digital mastering *(see page 2)*

Marketing: The Premiere Experience Concept and the Return of the Roadshow

A critical requirement for 70mm identified by the 65/70mm Workshop was a relevant, contemporary, effective and well thought-out marketing strategy.
In the modern era marketing has evolved into a sophisticated, semi-scientific, activity based around behavioural psychology and highly-developed data-gathering techniques. Product branding is now a stand-alone discipline and central to effective marketing.

In the context of high-quality cinema presentation using 65mm for production and 70mm for exhibition, the challenge was seen as how to update the marketing techniques of the past for contemporary cinema audiences. Considerable creative effort is required in terms of "positioning" the 65/70mm format in today's cinema exhibition environment as a modern, high-quality experience.

Key concept elements of a modern 65/70mm marketing strategy were identified as: Quality, Tradition, Spectacle, Theatricality, Contemporary relevance and Exclusivity.

One strategy is to focus on the indirect attributes of the format, rather than on its immediate technical characteristics (since in today's world '70mm' does not have the same widespread 'brand recognition' that it had in the past). To this end, the brand concept of ***The Premiere Experience*** was devised.

The word 'Premiere' (US: 'Premier') connects with the key concept elements described above. It evokes images of the 100-year history of the film industry, an exclusive "red carpet" atmosphere, a high quality theatrical experience and something of quality and lasting value. A Premiere Experience can be inserted into today's exhibition environment via a physical upgrade to the largest screen or screens in a typical cinema complex, by way of a sub-concept known as the ***Premiere Screen*** concept. This also diversifies the cinema experience, in much the same way that modern retail department stores contain discrete sub-units (the 'store within a store' concept). *(Some cinema chains may already use the term 'Premiere Screen', its use here is purely coincidental and unrelated.)*

Premiere Screens could also be installed at dedicated single-screen cinemas or cinemas with small numbers of screens (for example 3-screen and 4-screen cinemas). Indeed it can be argued that Cinema as an artform and a craft has suffered considerably through the influence of the retail industry and that a de-coupling is desirable via a return to stand-alone cinemas with larger screens and vastly better design. Some effort should be made to bring back some of the imagination of the past and make such cinemas consistent in quality but unique in design and management, accommodating the different customers demands whilst bringing back the sense of excitement that 'going to the pictures' had in the past. This of course is dependent on a new economic model being developed that would remove the current 'need' for multiple screens, run at very low profit margins.

An upgrade to the largest screen in a cinema complex - which usually can include a 'dormant' 35/70mm projector if the complex was constructed (or split) in the 1990s - could be carried out as a 'Premiere Screen' project. The re-vamp of the projection and sound system could be paid for by a small premium on ticket prices. Décor, seating and ambience could also be upgraded, and consideration could be given to significant additional upgrades of the sound system via a loudspeaker baffle wall and greatly enhanced acoustics, which would further support the technical presentation. The interested Exhibitor could go further by installing a compound curved screen to the immersive design discussed above, and Premiere Screens could be certified to guarantee quality of experience. The 'Premiere Screen' concept would typically involve just one screen (or for large complexes, two), thus minimising outlay and maximising returns.

Edwards 21 screen complex, Irvine, CA

In large complexes the second screen capability is advantageous in transferring 70mm titles after the initial period of the run.

Allied to the wider *Premiere Experience* concept, along with a 'Mini-Roadshow' distribution model, are the following ideas:

1. ***Re-introduction of Hard Tickets*** (tickets at higher prices than normal, with allocated seats, which must be booked in advance, but not to exceed current 3-D ticket prices). This could be coupled with special promotions during weekdays with allocated seats to promote the system and grow audiences

2. ***Re-introduction of high-quality promotional Brochures*** which give information on the film, and which can be purchased by the audience at the cinema as collector's items, as stage theatres still do

3. ***Re-introduction of Trailer Tags***, attached to the trailer for the feature film in question and which give release dates and booking details

4. ***Re-introduction of other Roadshow marketing techniques***, including Showmanship in the style of the Todd-AO pioneer and Showman Mike Todd, with use of curtain tabs and full stage lighting. Adverts should be clearly differentiated from the main feature and ideally shown using a smaller screen ratio with curtains just half opened and a simpler and softer sound set-up so as to distinguish it from the film experience. The current practice of showing adverts on a screen larger than that for 'Scope features (the incorrect 'common width' screen configuration) damages the film experience as something unique

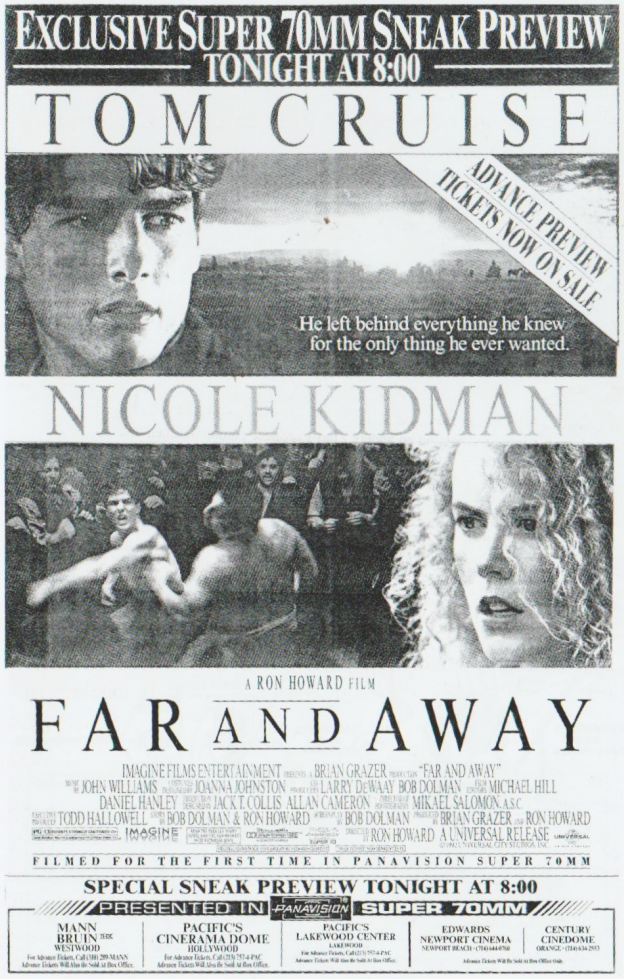
5. ***New promotional 65/70mm trailers*** which educate today's audiences regarding the craft aspects of the format, as well as its history. These could be run prior to 70mm feature presentations, in the same manner as conventional sound format trailers, and could comprise short interviews and clips. Similar material could be incorporated into trailers for 65/70mm features themselves. One excellent example is the special 70mm theatrical trailer for ***Far and Away*** (1992) where director Ron Howard and producer Brian Grazer explain the unique qualities of the 65mm format to the audience. This could be extended into a new short to promote the 70mm format, like the original ***The Miracle of Todd-AO***

6. ***Avoidance of cheap concession foodstuffs*** (Cinerama theatres of the 1950s and 1960s prohibited the selling of popcorn), and their replacement with more sophisticated products like wines and quality confectionery, as found in stage theatres. The Roadshow presentation format facilitates Intermissions that could also increase revenues from sales of such products

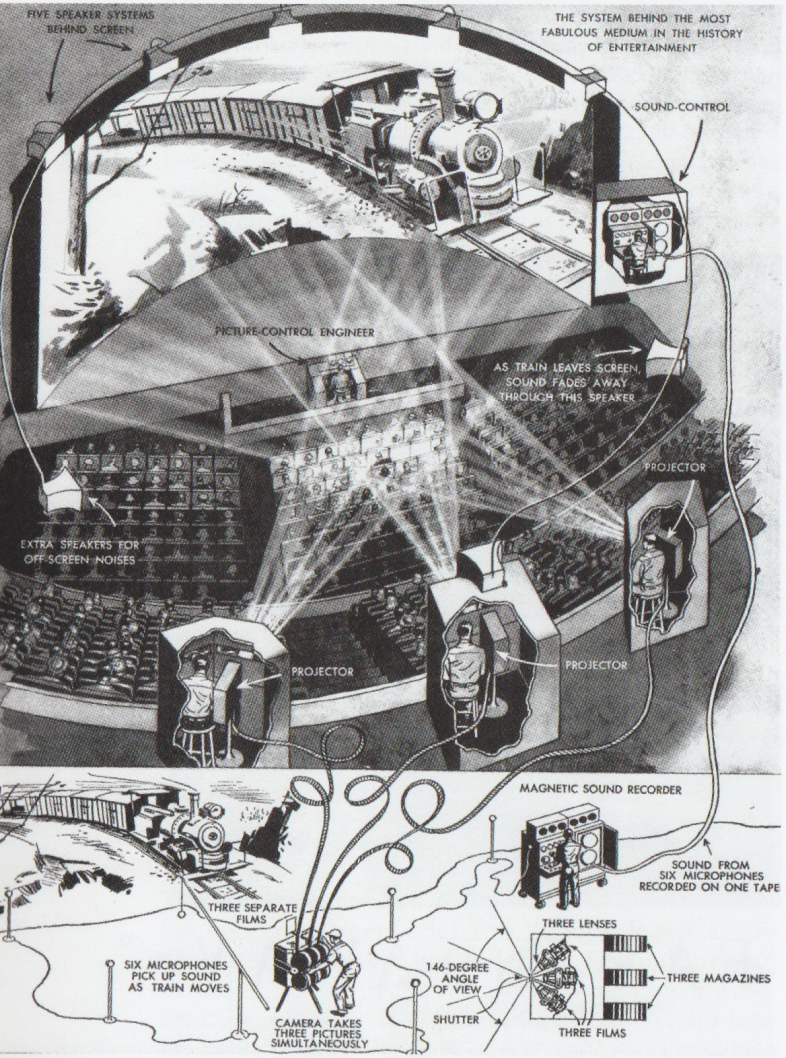
7. ***The return of the Roadshow format***; something that is belatedly being done for the IMAX release of *Transformers 2: Revenge of the Fallen*. Full versions of major films are increasingly only released for the home cinema market, with cinemas having shorter versions, when the contrary should be the norm

8. ***The return of the Overture*** - albeit perhaps not as long as it used to be in the 1960s - enhancing a sense of anticipation whilst the lights dim and only the footlights beneath the curtains remain.

Distinctive cinemas in several countries have demonstrated that ***a return of Showmanship*** can be successful. Single-screen cinemas can also reorganise their space to provide for customers who would like to have a meal whilst watching their favourite movie. The Interval during a Roadshow presentation is the ideal time for some food, (which could in some cases be theme-related to the main feature) as has been experimented with in Europe.



And then: 1952 'This is Cinerama' Arrived



Cinerama made its debut on September 30, 1952 at the Broadway Theatre in New York. It was the start of a range of wide screen revolutions like ***CinemaScope*** and ***Todd-AO***. For the first time in moviegoing experience the cinema audience was really taking part in the action because of the deeply curved screen, which was six times the size of a normal screen and covered an arc of 146 degrees width and 55 degrees height. (The human vision covers a field of 160 degrees width and 60 in height). While seating in their cinema chairs visitors travelled all over the world visiting places they had never experienced before! ***Cinerama*** completely surprised the audience by the large images on the huge curved screen while they were surrounded by stereophonic sound from all directions.

The inventor of Cinerama, ***Fred Waller***, a former special effects man who was looking to create more reality in motion picture presentation. After years of experimenting he finally developed a screen that nearly covers the human vision. For shooting a film for that extremely wide screen he combined three 35mm cameras on a large sturdy metal frame next to each other. Each camera was shooting one-third of the total image. The cameras were modified 35mm cameras, as every film frame should have six perforations instead of the normal four. And the film speed was changed from 24 normally to 26 frames per second for the Cinerama cameras. Fred Waller found out that a normal screen would give reflections on the opposite side of the screen so he developed a screen that consisted of a thousand of narrow strips (called louvers), vertically suspended from the screen frame. Each strip had to be positioned very carefully in line with one of the corresponding three projectors to avoid reflections from the other side. ***Cinerama*** uses three projection booths to project the three 35mm film strips next to each other on the curved screen. So every theatre had an operating crew of five men, three projectionists, one for every booth, one chief sound engineer and a fifth engineer to control the lights and the curtains. Only the Cinerama chief engineer was allowed to start and stop the show. The Cinerama screen size varied from 75 x 26 feet in 'normal' theatres to 90 x 30 feet in a large theatre. Sadly Fred Waller died in 1954 at the height of the Cinerama success. The original Oyster Bay Studio near New York, a former indoor tennis court, where Waller started with his Cinerama experiments, was later used for sound recordings with the ***Cinerama Symphonic Orchestra*** for various Cinerama productions.

The first Cinerama film ***This is Cinerama*** started in 1952 in the USA on a glorious trip around the country with millions of visitors. In early advertisements about the celebration of it's first Broadway anniversary, only the word ***Cinerama*** was mentioned without the film title in the advertisements: 'There is only one Cinerama, the ***Jazz Singer*** introduced sound and Technicolor showed the images in color, but only '***Cinerama***' surrounds you with movement, color and sound so realistic – with such a dynamic impact – that you become part of every briljant sequence!'
At the beginning of ***This is Cinerama*** and especially during the premiere the audience was put on the wrong foot when screening started with a proloque, by Lowell Thomas, on the history of the movies presented on a small standard screen with overdone mono sound. But after a few minutes he concluded his story with the historic words: "Ladies and Gentlemen: ***This is Cinerama***," while the curtains opened to reveal the full size of the huge screen with large images they had never seen before.

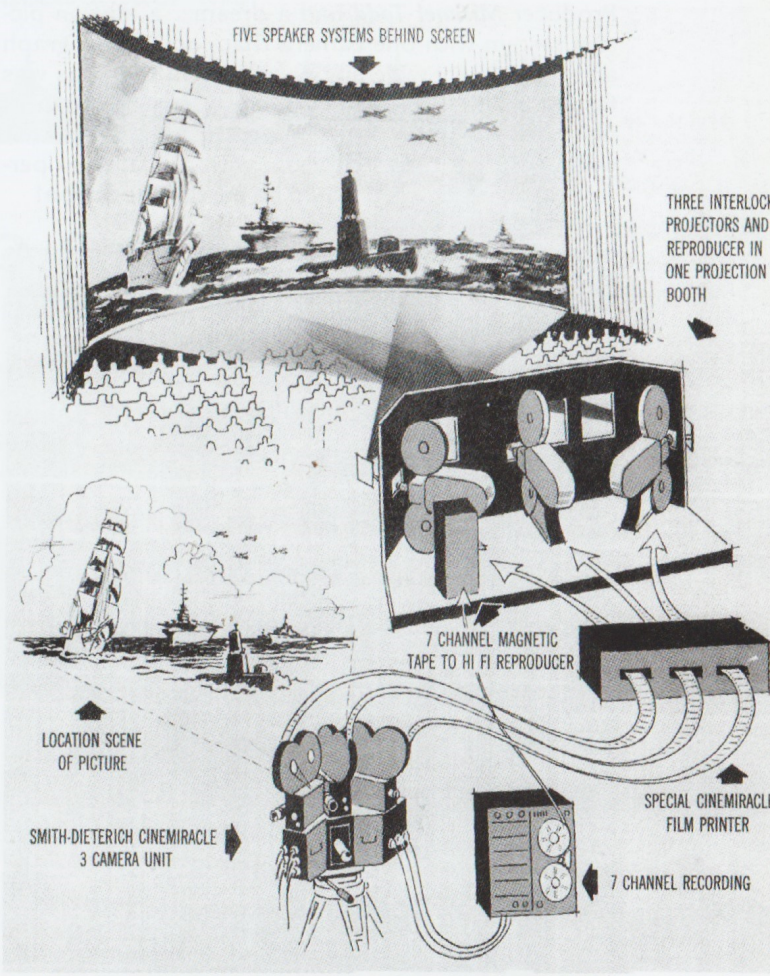
The first Cinerama film was produced by Lowell Thomas and Michael Todd. His son Michael Todd Jr assisted his father in filming the European sequences with the only one existing Cinerama camera at that moment. On the 5th of June 1953, eight months after the premiere in New York, Cinerama moved from the Broadway Theatre to the larger Warner Theatre, where it ran for nearly two years.

This is Cinerama started in Europe on 30 September 1954 in the Casino Theatre (1337 seats) in London where it ran for a period of 16 months. The Casino was the first Cinerama installation outside the USA making it a total of 14 installations worldwide all running that same one Cinerama film.
The 2nd film ***Cinerama Holiday*** produced by Louis de Rochemont started in New York on February 8, 1955 and one year later in London, on the 1st of February 1956, where it ran for 2 years. The 3rd film, produced by Lowell Thomas, ***Seven Wonders of the World*** started in New York on April 10, 1956 and in London on 26 February 1958, running there for 88 weeks.
The 4th film ***Search for Paradise*** again produced by Lowell Thomas, started in New York on September 25,1957 and in London on 8 March 1961, running for 8 months.
The last Cinerama Travelogue ***South Seas Adventure*** premiered on July 16, 1958 in the USA and ran in London for 70 weeks from 4 November 1959 on. It was produced by Carl Dudley.

In 1955 Louis de Rochemont left the Cinerama group to develop his own 3-strip process which he called '***CineMiracle***'. The first and only feature he made in this process was ***Windjammer***, which premiered in April 1958 at the Chinese Theatre in Hollywood where it ran for 36 weeks. Like Cinerama this process uses three 35mm cameras to shoot a wide screen picture and also three 35mm projectors to compose a huge wide screen image, but there was one important difference that the three projectors were situated in one large projection booth in the back of the theatre. Because of the use of mirrors the image of the right projector went to the right side of the screen and the image of the left projector to the left side, the middle projector composing the three images all together. The use of mirrors also diminished the problem of the join lines which were often visible in the Cinerama image on the screen. Cinerama uses three projection booths with the left projector throwing its image on the right side of the screen, the right projector on the left side and the middle one straight forward. A few months after the introduction CineMiracle was taken over by the Cinerama company being afraid of competition.

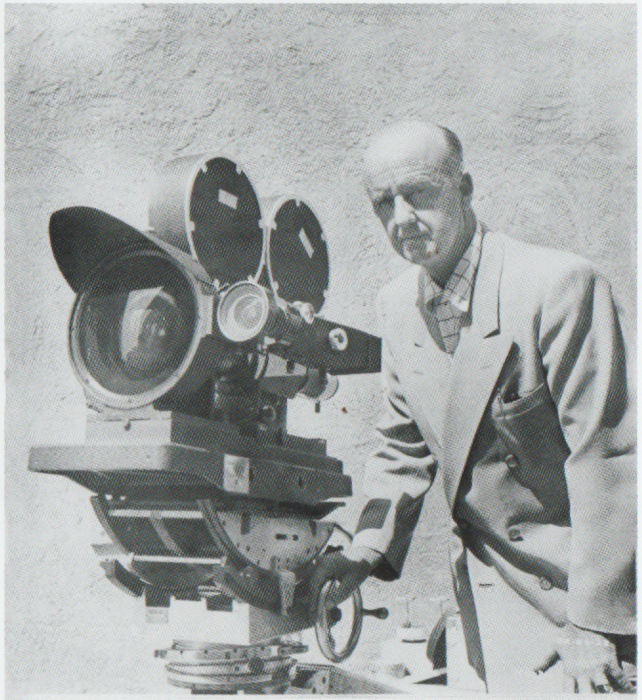
By 1958, six years after the introduction, there were 37 Cinerama theatres worldwide. In 1962 when there were already 85 installations worldwide, MGM got involved in Cinerama and introduced their first Cinerama feature film ***The Wonderful World of the Brothers Grimm***. However, 1963 was Cinerama's peak year with the premiere of '***How the West Was Won***' and a number of 127 Cinerama installations worldwide! In the Soviet Union there were 73 Russian type of imitation Cinerama installations called ***Kinopanorama*** by the end of 1966. The last European 3-strip real Cinerama screenings were in 1972 in Rotterdam.

Nowadays there are only three Cinerama theatres worldwide: one in Bradford, UK which opened in June 1993 (306 seats) thanks to the inspiring work of Willem Bouwmeester, technical advisor for the International Cinerama Society living in The Netherlands in close cooperation with John Harvey, Mr. Cinerama from the USA. It was at that moment the only operating 3-strip Cinerama theatre in the world. In April 1999 Seattle's former Martin's Cinerama theatre was re-opened after it had been bought by Paul Allen of Microsoft and renovated as an original Cinerama theatre with three 35mm projection booths and 70mm projectors in the centre booth. Allen also funded the restoration of ***How the West Was Won***. The Cinerama Dome in Los Angeles that opened in November 1962 with the World premiere of the 70mm Ultra Panavision 'Super Cinerama' film ***It's a Mad, Mad, Mad, Mad World*** was renovated and re-opened in October 2002 as an original Cinerama theatre with three 35mm projection booths and the screening of a restored print of ***This is Cinerama***. They had never screened original Cinerama films before.



Todd-AO, the Dream of Mike Todd

Producer ***Michael Todd*** had a dream... a motion picture system with one camera that could photograph action in a very wide angle... a camera that was was flexible, capable of telling a story... on one strip of film... from a single projector... on a large screen that was wide and deeply curved... with a quality so perfect that the audience would be part of the action!



The TODD-AO Process

Using 70 MM Film, Special Cameras, Large Curved Screen and the Finest 6-Channel Hi-Fi Orthosonic Sound

Shortly after the premiere of ***This is Cinerama*** Mike Todd sold his shares in Cinerama because the board of director's did not listen to him when he was complaining about the shortcomings of the system. At the moment that the decision was made by Cinerama to build theatres all over the US and Europe, Todd radically left the company because he was aware of the many problems of Cinerama, in particular the join lines between the three projected images. He wanted the same effect as Cinerama but with just one camera and one projector. His dream began to come true. He was very lucky to find ***Dr Brian O'Brien*** who had just entered the ***American Optical Company***, the largest optical company in the country as head of research. It took Dr O'Brien and a team of the University of Rochester nearly three years of research and experiments to develop the new lenses. Although American Optical had to design the complete new system, they subcontracted the camera work to the Mitchell Camera company. And the Philips Company in The Netherlands entered into an agreement with American Optical in October 1953 to design the projector for the Todd-AO process. Philips had a lot of experience since they were engaged in the design and production of 35mm projectors since 1934. They were instructed to design a compatible 35/70mm projector that could handle 70mm film as well as 35mm. They succeeded in developing the DP 70 projector in only 6 months and by the spring of 1954 three finished projectors were delivered at American Optical in Massachusetts. The ***Philips Company*** received an Oscar for their revolutionary design of this 'multi purpose' projector.

Dr O'Brien found out that for the projection of a movie on a large curved screen a 35mm film would not be sufficient and so he decided they would need a new larger camera negative. So he was provided with cameras from the earlier industry's attempt to introduce wide film in 1930. His 65mm format is exactly the one used to photograph the 65mm version of ***The Bat Whispers.*** This 65mm picture frame is three and a half times the area of the standard 35mm film frame. A six channel soundtrack was developed and the release prints were 70mm: 5mm extra to create space for the 6 magnetic sound tracks along the edge of the film. O'Brien and his assistants of the American Optical company developed four new Todd-AO lenses that cover everything from a close up to wide distance shots. They range from the huge 128 degree (angle of coverage) wide angle lens - called 'bugeye' because of its enormous front element - down through the 64 - 48 and 36 degree lenses. And so the ***Todd-AO 65/70mm*** format was the guarantee for a sharp image when blown up onto a large wide screen and without the technical problems of the 3-strip ***Cinerama*** system where Mike Todd's dream for Todd-AO was born. The words Todd-AO on advertisements, filmposters and on the theatre front had become a benchmark for superior picture, projection and sound quality. Even producers and directors were convinced of the necessity to produce a high quality motion picture with great care, that would guarantee high proceeds as a return on the large investment. The campaign to present the exceptional high quality film productions as a roadshow presentation only in prestigious theaters gave the public the feeling that going to such a 70mm film presentation was an event quite different from a normal cinema visit! Todd-AO films were only

playing in a handful of large theaters. Only sixteen feature films were made in the Todd-AO 70mm process. The proof of quality was confirmed with eighteen ***Academy Awards*** being won by these few 70mm films.

Magna Theatre Corporation was created in November 1952 only two months after the premiere of ***This is Cinerama*** after Michael Todd had persuaded Joseph Schenck from United Artists Theatre circuit that he had a revolutionary idea for motion picture photography and projection. Thus Magna's purpose was to finance the experiments necessary to develop the Todd-AO process. By August 1953 the experiments were so hopeful that Rodgers and Hammerstein II agreed to produce their musical play ***Oklahoma!*** in the new process! The Todd-AO Corporation, with full control of licensing the 70mm process, was created in August 1953 in Wilmington, Delaware, after an agreement had been reached by the American Optical Company and Magna Theatre Corporation. The main goal of the new corporation, that had all the Todd-AO patents and developments, was to provide cameras and licenses to producers who wish to work with the Todd-AO system. The company was also the source for supplying Todd-AO installations to theaters wishing to install 70mm equipment. In October 1955 there were only seven Todd-AO cameras available. By 1962 there were 580 Todd-AO theatres according to Magna Pictures, 220 in the USA and Canada, 40 in the Unitedate d Kingdom, 240 on the European continent and 80 in the rest of the world.

The first tests of the new ***Todd-AO process*** made by Mike Todd and Skippy Sanford were shown in June 1953 in the Regent Theatre in Buffalo while further tests were done under the direction of Fred Zinnemann. The success of the Zinnemann test screening in August 1953 made Rodgers and Hammerstein finally sign the contract to produce ***Oklahoma!*** In Todd-AO! The premiere on October 13, 1955, proved to be a great day for Todd-AO and Oklahoma!

Rodgers and

The original Broadway run of the musical production of ***Oklahoma!*** started on March 31, 1943 in New York. It ran for more than five years on Broadway and ended after 2212 performances on May 29, 1948. Meanwhile it had played in 252 cities in the US and Canada and in nine other countries outside the US. The original London premiere took place on 29 April 1947 and lasted 1548 performances. ***Oklahoma!*** was the beginning of a most successful partnership of Richard Rodgers and Oscar Hammerstein II, that ended in 1959 with ***The Sound of Music*** because of Hammerstein's death in 1960. That put an end to one of the richest partnerships ever known in show business.

The motion picture production of ***Oklahoma!*** was started in July 1954 at the MGM Studios in Hollywood with a budget of over 4 million dollars and was completed after 107 production days on December 6, of that same year. More than 325 people were involved in the production and more than 70 trucks and trailers were used to transport all the equipment to the outdoor locations in the state of Arizona. Most of the exterior shooting was done in Arizona since it looked more like Oklahoma at the beginning of the century, with all the oil rigs and telegraph poles now in the fifties. Stage 2 of the MGM Studios was used to set up the first Todd-AO projector and curved screen to check the daily rushes.

It was producer Arthur Hornblow Jr, who invited top director Fred Zinneman to fly on a highly secret mission to New York where a friend of his (Michael Todd) was experimenting with a new wide screen process. They wanted to show it to some people for an evaluation and so Zinneman got involved. Hornblow was a friend of Richard Rodgers and he arranged a meeting between Todd and Rodgers & Hammerstein.
At first ***Rodgers and Hammerstein*** were reluctant to sell the rights of their musical play to Michael Todd, but he invited both to a special screening of test sequences made by director Fred Zinneman.

Hammersteins 'Oklahoma!'

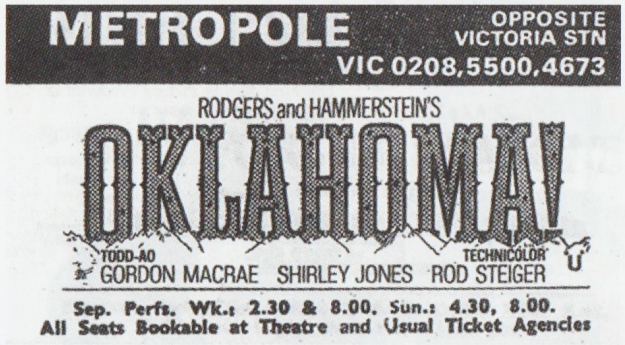
These 65mm test screening convinced them of the possibilities of the new Todd-AO process and the next day they sold the ***Oklahoma!*** film rights for a million dollars and 40% of the box-office revenues.

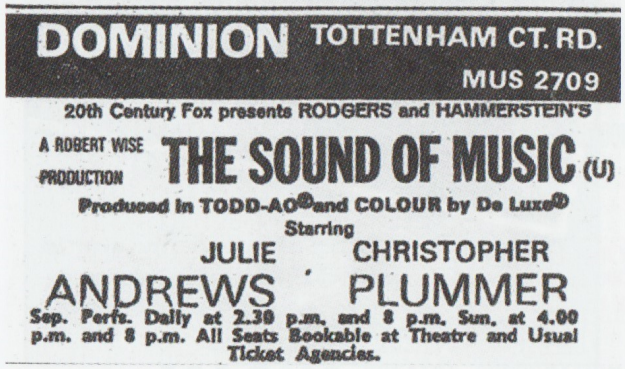
Before the actual photography had started, extensive tests of the new American Optical lenses were carried out. The test shots were made in Hollywood with an old Mitchell Paramount 65mm camera from the thirties with the new lenses mounted on it, by cameraman Harry Stradling. But in order to see these rushes they had to fly to Buffalo, as that was the only laboratory capable of developing and printing 65mm film. The first Todd-AO screenings took place on August 14, 1953 at the Regent Theatre in Buffalo. They used a 25 years old Ernemann 70mm projector.

In March 1953 the Magna Corporation was founded to finance the Todd-AO process and to organize the distribution and advertising for the film. Members of the board and also stockholders were Georg Skouras, Joe Schenck, Arthur Hornblow Jr, Mike Todd and Rodgers and Hammerstein. Mike Todd wanted to produce ***Oklahoma!*** but the board of directors did not like the idea that he should have full control of the movie without the artistic control of Rodgers and Hammerstein! Yet Todd wanted to launch his new Todd-AO process and he was anxious to direct ***and*** produce the first motion picture in that dynamic process! Once he had finished ***Oklahoma!*** in Todd-AO he would be the 'most important man in show business'. But the board 'threw' him out and appointed Arthur Hornblow Jr. producer and Fred Zinnemann director. They only allowed Todd to produce a 70mm short The ***Miracle of Todd-AO*** that was screened preceeding the main feature. It was also Hornblow who discovered in a magazine, a picture of the beautiful San Rafael Valley in Arizona to replace the original Oklahoma territory as the film's principal outdoor location. The cornfield that played an important role in the opening scene of the film was especially planted in January 1954, wel kept with great care and so the corn grew better than usual, to reach ultimately the 'as high as an elephant's eye' level.

With the Todd-AO camera and the wide-angle lens cameraman Robert Surtees has shot beautiful backgrounds of yellow cornfields. Old-fashioned blooming farmhouses, open plains and a fantastic natural blue sky full of fleecy clouds often resulting in feelings of a real sense of depth in many of the outdoor scenes. The whole production was to be shot simultaneously in 35mm CinemaScope as well as in 70mm Todd-AO because at the time of filming they were not sure of the success of the new 70mm process. So each scene would be shot with two cameras side by side. However the ultra-wide Todd-AO lens rarely permitted a CinemaScope camera working alongside the 70mm camera, so this plan was dropped in favour of shooting most of the scenes twice, first with the 70mm camera and second with the CinemaScope camera. Sometimes three cameras were used; a 70mm with the ultra-wide angle lens on it, a 70mm with the 'normal' Todd-AO lenses and the 35mm camera. The World premiere of ***Oklahoma!*** in 70mm Todd-AO took place in the Rivoli Theatre in New York on 13 October 1955. After this Roadshow premiere the New York Times wrote in a positive review: 'Fortunate was it that the authors held up the filming of their show until, by chance, the development of large screen techniques became the urge in the medium. Fortunate was it too, they decided upon a system as favorable in basic respects as the new Todd-AO. ***Oklahoma!*** Is here. But what makes it most fresh and exciting on the screen is the range and grandeur of the images and the extraordinary quality of the sound!' The premiere of the CinemaScope 35mm version started one year later in November 1956. The European 70mm premiere was four years later in London on 26.12.1959. In November 1982 the original film had a limited re-release by the Samuel Goldwyn Company with 7 new 70mm prints! That was the last time new prints were struck from the original negatives.

The Fifties and Sixties: The 'Heydays' of 70mm



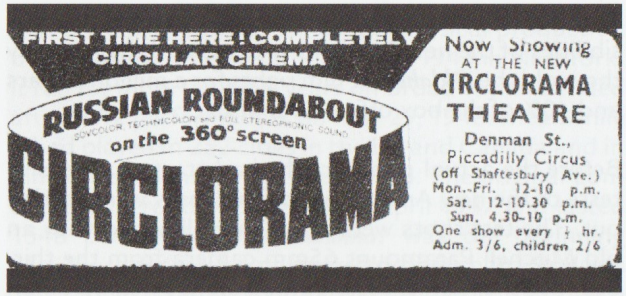


Nowadays visiting London is trying to get tickets for the Millennium Wheel, queuing for one of the many (free) museums or making a boat trip on the river Thames and in the evening another difficult choice out of the many exotic restaurants all over town.

Visiting London in the fifties and sixties however, was even more difficult in choosing where to go and what to do first. There was no Wheel (there was the Tower Bridge!), there were already a lot of museums to visit, but another great event for that time were the many spectacular big screen cinema theatres.
Even if you were not a cinema lover, you should visit the London Casino, not to loose your money, but to buy a ticket for the British premiere of the famous epic-scale Cinerama Western ***How The West Was Won*** in November 1961. This magnificent photographed, first feature film in the 3-strip film process, with famous stars like James Stewart, Debbie Reynolds, John Wayne, Henry Fonda and many others attracted thousands of excited visitors to the London Casino with it's 1337 seats. The Casino Cinerama theatre, which was a live theatre before, re-opened on the 1st of October 1954 with ***This is Cinerama***, which ran for more than two years. Three minutes further down the road the beautiful Coliseum theatre with 1795 seats was also renovated in 1963 from a live theatre into a 70mm Cinerama theatre to show the first Cinerama feature film ***The Wonderful World of the Brothers Grimm***.

Another competitor of Cinerama was the Cinemiracle process. The first an only production Louis de Rochemont's ***Windjammer*** opened in the States on 9 april 1958 and arrived surprisingly already on 13 May 1958 in London were it opened at the Odeon Tottenham Court Road. The run at the Odeon with 1860 seats lasted relatively short until the 1st of November 1958 and the Cinemiracle installation was removed.

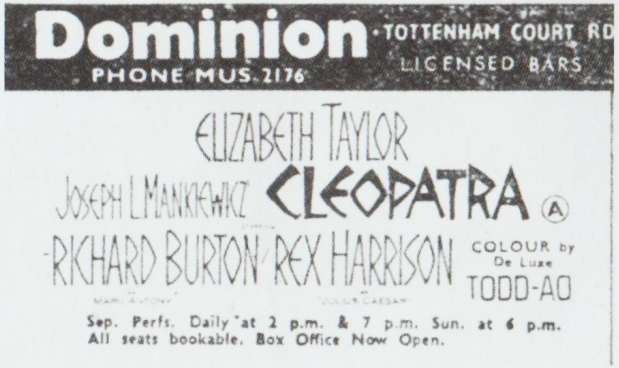
There were so many 70mm epics and filmed musicals which ran for a year or more in the West End cinemas, that releasing companies were urgently looking for possibilities of renting a live theatre that could be renovated for one of the new 70mm widescreen processes. In April 1958 the Dominion at Tottenham Court Road was equipped as the first Todd-AO 70mm theatre in Britain for the premiere of Rodgers and Hammerstein's ***South Pacific***.At the end of the next year the Empire and the Metropole Victoria were also equipped with 70mm installations, for ***Ben-Hur*** and for ***Oklahoma!***. The Royalty which was opened in 1960 as a live theatre with 850 seats, was also renovated as a 70mm cinema, to find a place for Stanley Kramer's ***It's A Mad, Mad, Mad, Mad World***.



London Was the Place to Be

Also the '***real Royals***' had their busy 70mm times: in January 1961 there was the Royal Charity Premiere of ***My Fair Lady*** in glorious 70mm at the Warner and in February the Royal Film Performance 1961 of ***Lord Jim*** with Peter O'Toole took place at the Odeon Leicester Square.

Round the corner at Piccadilly Circus the only European Circlorama theatre, run by a Russian company, presented ***A Russian Roundabout***. With eleven 35mm projectors on a 360° circular screen the audience was completely surrounded by moving images in Technicolor with stereo sound. After some time also a British made circular film called: ***Circlorama Cavalcade*** was presented at this theatre.



In 1962 the Dominion Theatre at Tottenham Court Road had its 5th record-breaking year of the Todd-AO film ***South Pacific***, while the Astoria on the other side of the road, had the 1962 Royal Performance of ***West Side Story*** in 70mm Panavision which ran there for more than two years. In March 1963 the German Superpanorama-70 ***Flying Clipper*** premiered in the Dominion to replace "South Pacific". In that same year Metropole Victoria was housing David Lean's ***Lawrence of Arabia*** and Royalty Cinerama ***Mutiny on the Bounty***, while ***El Cid*** was in 70mm at the Odeon Haymarket. The CinemaScope version of ***South Pacific*** was for the first time in the London West-End 'at normal prices' at the Carlton Haymarket!

In 1965 Astoria had a long-run of ***The Fall of the Roman Empire***, produced by Samuel Bronston, while the four hour version of ***Cleopatra*** with Elizabeth Taylor settled in the Dominion. The Casino Cinerama was still occupied with ***How The West Was Won*** and the Coliseum Cinerama had Samuel Bronston's ***Magnificent Showman*** also known as ***CircusWorld*** on the projectors. The 3rd Cinerama theatre Royalty was still showing ***It's a Mad World*** while Metropole Victoria had a 70mm print of ***West Side Story***.

In 1967 Dominion played the Todd-AO print of ***The Sound of Music***, while ***South Pacific*** returned to the Astoria and ***Oklahoma!*** to the Metropole theatre. In the Casino an Ultra-Panavision 70mm print of ***Khartoum*** was screened on the large Cinerama louvre screen and in the Coliseum Cinerama a 70mm Dimension-150 print of ***The Bible... In the Beginning*** ran through the projectors. And last but not least: in the large Empire at Leicester Square: ***Gone With The Wind***, advertised as 'for the first time in 70mm Widescreen and Full Stereophonic Sound'.

Whow! What a choice!


raka


Hamlet


Far and Away


n-Hur


South Pacific


Oklahoma!


eopatra


Around the World in 80 Days


Far and Away

55 Days at Peking

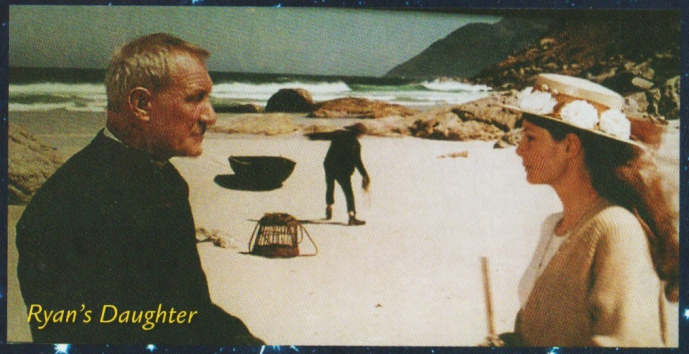
Hello Dolly

My Fair Lady

Cleopatra

Little Buddha

Lawrence of Arabia



Ryan's Daughter

Michael Todd, the 'Magnificent Showman' and...

It was a foggy Saturday night in March 1958, when a twin-engine twelve-passenger Lockheed airplane, the "Lucky Liz", crashed on the hills of a mountain in the US state of New Mexico. On board were ***Michael Todd***, the famous showman with his friend Art Cohn, screenwriter and a pilot. Nobody survived the crash.

Mike Todd was on his way to New York, where he would be proclaimed ***Showman of the Year*** during a dinner at the Friar's club. At the last moment his wife Elizabeth Taylor had to stay home because of a severe illness. She was in total shock when she heard of the sudden death of her fairy-tale husband. Despite Mike was nearly twice her age, she was deperately in love with him. Nobody will ever know what we have missed through the unexpected death of this most extraordinary film and musical producer. The only thing that we know is that he was busy with the preparations of a new film production ***Don Quichote*** with the Mexican actor Cantinflas, who played also one of the main characters in ***Around the World*** and the French actor Fernandel, and a small part for Elizabeth Taylor as the wife of Sancho Panza (Cantinflas). This was the unexpected end of the life of a man who was born in 1909 in Minneapolis as Avrom Hirsch Goldbogen, one of eight children from Chaim and Sophia Goldbogen, Jewish immigrants from Poland. Michael Todd, a self-made man who became a flamboyant Broadway producer, only 5 feet-9 inch tall, but a bundle of energy.

At the time of their plane crash, Mr Cohn had just nearly completed Mike's biography. Luckily Mr. Cohn's wife was able to reconstruct the two last chapters of the biography, that was called: ***The Nine Lives of Michael Todd***.
He left the world with only one motion picture ***Around the World in 80 Days***. One of the most extravagant motion pictures of all time! He started his career in showbusiness in 1932 with the musical ***Call me Ziggy***, but before that he had already had an impressive number of jobs. At the age of seven he delivered newspapers. When he was eight he practised in poker games and at eleven he was the assistant of a magician. An hour after his tonsils were removed he returned to school, inviting everyone to examine his bloody throat at five cents a look! At eighteen he was operating a multi-million dollar business in Chicago. In 1927 on Saint Valentine's Day, he married a beautiful, sensible 18 year old Jewish girl, Bertha Freshman. She was the daughter of a rich family.

Reading about ***The Jazz Singer***, a semi talking picture, started his interest in the film industry and in 1928 they moved to Hollywood and he announced himself as a soundproof expert. At the age of twenty he was one of the most successful business men in Los Angeles, but his interest in the making of film rose!
In the meantime his son Michael was born on October 8, 1929. Two years later his father, whom he admired very much, passed away in a hospital in Chicago. Not being able to say goodbye to him, he was so shocked by his death, that he changed his name Avrom Goldbogen to Michael Todd, Michael after his son and Todd because of Avrom's own nickname 'toat'.
Meanwhile he was also a successful producer of Broadway shows, such as ***The Hot Mikado***, ***Something for the Boys***, ***Mexican Hayride***, ***Up in Central Park*** and ***Hamlet***, the longest running play in Broadway history! At the age of 37, he had four shows running simultaneously that brought him a huge profit. But the next year he went into bankrupty for more than a million dollar!

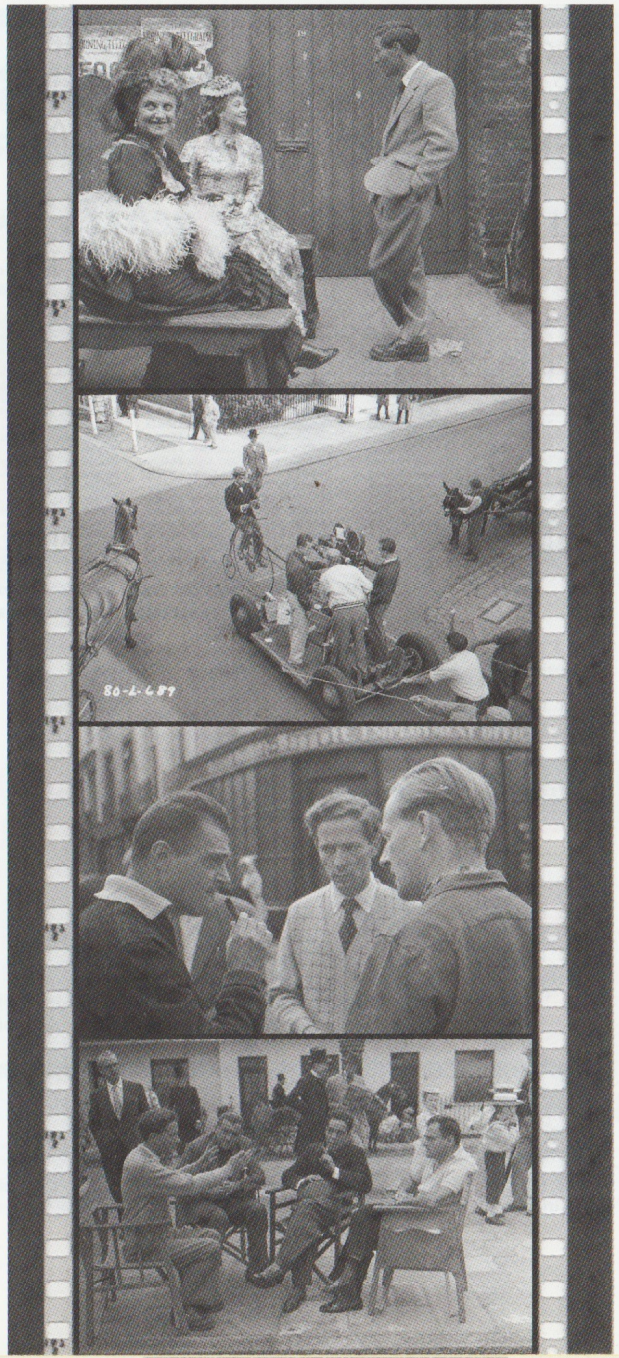
In 1945 Michael Todd started as an independent filmproducer and in 1951 he founded with Lowell Thomas the Thomas-Todd production company. Together with Thomas he was the originator of the so-called 'Road-Show' trying to make a show out of a film performance! Through the co-operation with Lowell Thomas, Mike became involved in the Cinerama 3-strip film process and was one of the financial backers.

'Around the World in 80 Days'

With his son Michael Todd Jr. he was the producer of the European part of ***This is Cinerama***. They travelled to Paris, Milan and Rome and succeeded in many nice scenes for this new complicated wide screen process. Soon after the premiere Todd noticed the many problems of the Cinerama 3-strip process and he went looking for another easier widescreen process. And so he arranged a meeting with Dr. Brian O'Brien of the American Optical Company and convinced him to develop a new 70mm film process, called ***Todd-AO***. In 1953 he founded the Magna Corporation with Joseph M. Schenk. He sold his rights in ***Oklahoma!*** for over four million dollars to finance the filming of ***Around the World in 80 Days***. He was fascinated by this Jules Verne adventure classic. Mike said about him: "When Jules was writing in his garden ***Around the World***, he sure had Todd-AO in mind!" The screen version of this novel is not only the most ambitious independent film project ever attempted in film making history, but also the biggest one-man undertaking project.

In early 1956 he started with this largest film show production ever with a 5 million dollar budget.. It was before the cameras with a total of 157 shooting days, on 112 different locations in seven foreign countries, two domestic locations and at the backlots of five major Hollywood studios. More than 50 000 people were employed in different parts of the world under the inspiring direction of young director Michael Anderson (what's in a name!). He had 34 assistent directors to work with on the different locations and nearly 50 famous stars next to David Niven, Cantinflas, Robert Newton and Shirley MacLaine. Each scene in this motion picture was photographed twice mostly by the same 65mm camera: first with 30 frames /second for the original ***70mm Todd-AO*** print and then with the standard 24 frames /second for easier reduction prints on 35mm film. But often when it was possible, two 65mm cameras were placed side by side. When he arrived in Paris with his production team, he informed about the scene with the balloon. "But Mr Todd! In the whole book there is no sign of a balloon anywhere." Todd replied: "That's then a mistake of Jules Verne, in my film, Phileas Fogg travels over the Alps in a balloon!" But because of the height fear of David Niven, they could only rise the balloon a few metres above the ground, hanging on top of a crane with an icy miniature mountain under it.
The world premiere took place on 17 October 1956 at the Rivoli Theatre in New York. The European premiere was during the Cannes Film festival in May 1957 and while the balloon from the film floated above the Mediterranean Sea, it looked more like a Michael Todd festival. Regular European screenings started in London on 2 July 1957, where the film ran for nearly two years. To escape from the British cinema quota rules a 34mm print was used instead of a 35mm! Despite it was not a 70mm print, a new wide screen had been installed in the Astoria Theatre so the 34mm CinemaScope print (from the 65mm/ 24 fps negative!) looked more like the Todd-AO version.

On the Oscar night in 1957 ***Around the World in 80 Days*** received five Academy Awards: for Best Picture of 1956, Best Cinematography, Best Musical Score (composer Victor Young), Best Film Editing and Best Screenplay.
Of all the appraisals he received for Around the World, the one he appreciates most and quotes larger than any other comment on all ads, is the one from a newspaper film critique that says: "Mike Todd's show makes this a better world." To ensure box-office success, Mike guided the film's exhibition with a manual to each theatre, outlining the organisation of the reserved seating, ticket prices and only two performances a day. Visitors received a program and, what a joy, popcorn and other food were strictly prohibited. There were no credits of the film at the beginning, but they were screened in a funny cartoon after the film. A useful innovation, now you could see who is who at the end of this great movie.



DP 70: Dual Purpose Projector

PHILIPS

TODD-AO 70/35 mm PROJECTOREN

over de gehele wereld

Reeds jaren levert Philips deze unieke machines ten behoeve van grote theaters in de USA en CANADA.

Albany, N. Y. ..... *Ritz Theatre*	Dayton, O. ... *Hunt's McCook Theatre*	Minneapolis, Minn. .. *Academy Theatre*	Sacramento, Calif. . *Alhambra Theatre*
Asbury Park, N. J. .. *St. James Theatre*	Denver, Colo. ..... *Center Theatre*	Upper Montclair, N. J. *Bellevue Theatre*	Salt Lake City, Utah ..... *Villa Theatre*
Atlanta, Ga. ..... *Roxy Theatre*	Detroit, Mich. ..... *Mercury Theatre*	Montreal, Canada ... *Alouette Theatre*	San Antonio, Tex. .. *Broadway Theatre*
Atlantic City, N. J. ... *Virginia Theatre*	Detroit, Mich. . *United Artists Theatre*	New Orleans, La. .. *Panorama Theatre*	San Diego, Calif. ..... *Capri Theatre*
Baltimore, Md. ..... *New Theatre*	Ft. Wayne, Ind. ..... *Clyde Theatre*	New York, N. Y. ..... *Criterion Theatre*	San Francisco, Cal. *Alexandria Theatre*
Beaumont, Tex. ..... *Liberty Theatre*	Hartford, Conn. ..... *Strand Theatre*	New York, N. Y. . *Loew's State Theatre*	San Francisco, Calif. . *Coronet Theatre*
Boston, Mass. ..... *Astor Theatre*	Hollywood, Cal. *Carthay Circle Theatre*	New York, N. Y. ..... *Rivoli Theatre*	Seattle, Wash. ... *Blue Mouse Theatre*
Boston, Mass. ..... *Gary Theatre*	Hollywood, Cal. ..... *Egyptian Theatre*	New York, N. Y. ..... *Warner Theatre*	Shreveport, La. ..... *Saenger Theatre*
Boston, Mass. ..... *Saxon Theatre*	Honolulu ..... *Kuhio Theatre*	Oklahoma City, Okla. .... *State Theatre*	St. Louis, Mo. ... *Ambassador Theatre*
Buffalo, N. Y. ..... *Century Theatre*	Houston, Tex. ..... *Tower Theatre*	Omaha, Nebr. ..... *Cooper Theatre*	St. Louis, Mo. ..... *Pageant Theatre*
Buffalo, N. Y. ..... *Granada Theatre*	Houston, Tex. ..... *Uptown Theatre*	Philadelphia, Pa. ..... *Boyd Theatre*	Syosset, N. Y. ..... *Syosset Theatre*
Chicago, Ill. ..... *McVickers Theatre*	Indianapolis, Ind. ..... *Lyric Theatre*	Philadelphia, Pa. ... *Goldman Theatre*	Syracuse, N. Y. *Shoppingtown Theatre*
Chicago, Ill. ..... *State Lakes Theatre*	Jacksonville, Fla. . *Five Points Theatre*	Philadelphia, Pa. .... *Midtown Theatre*	Syracuse, N. Y. ..... *Eckel Theatre*
Chicago, Ill. ..... *Todd's Cinestage*	Kansas City, Mo. ..... *Capri Theatre*	Phoenix, Ariz. ..... *Vista Theatre*	Tampa, Fla. ..... *Britton Theatre*
Cincinnati, O. ..... *Valley Theatre*	Little Rock, Ark. ..... *Capitol Theatre*	Pittsburgh, Pa. ..... *Nixon Theatre*	Toronto, Ont. ..... *Tivoli Theatre*
Cleveland, O. ... *Loew's Ohio Theatre*	Lexington, Ky. ..... *Strand Theatre*	Pittsburgh, Pa. ..... *Warner Theatre*	Tulsa, Okla. ..... *Ritz Theatre*
Columbus, O. ..... *Hunt's Cinestage*	Louisville, Ky. ..... *Brown Theatre*	Portland, Ore. ..... *Broadway Theatre*	Vancouver, B. C. ..... *Stanley Theatre*
Corpus Christi, Tex. ... *Tower Theatre*	Miami Beach, Fla. *Loew's 170 St. Theatre*	Providence, R. I. ... *Elmwood Theatre*	Washington, D. C. .... *Uptown Theatre*
Dallas, Tex. ..... *Tower Theatre*	Miami Beach, Fla. .. *Sheridan Theatre*	Richmond, Va. .. *Willow Lawn Theatre*	Youngstown, O. ..... *State Theatre*
Dallas, Tex. ..... *Wynnewood Theatre*	Milwaukee, Wis. ..... *Strand Theatre*	Rochester, N. Y. ..... *Monroe Theatre*	

Ook in EUROPA werden vele theaters door Philips met TODD-AO apparatuur uitgerust o.a.

West-Duitsland

1. Savoy - Hamburg
2. Royal Palast - München
3. Scala - Mannheim
4. Admiral Palast - Neurenberg
5. Rivoli - Hannover
6. Savoy - Düsseldorf
7. Grand Palast - Frankfort
8. Metro - Frankfort
9. Metro Palast - Berlijn
10. Atrium - Stuttgart

Engeland

1. Dominion - Londen
2. Gaumont - Manchester
3. Drake - Plymouth
4. Astoria - Brighton
5. West End - Birmingham
6. Gaumont - Glasgow
7. Majestic - Leeds
8. Queens - New Castle
9. Odeon - Sheffield
10. Odeon - Bristol
11. Odeon - Liverpool
12. Victoria - Edinburgh
13. Capitol - Cardiff
14. Odeon - Nottingham
15. Columbia House (Wingate House) - Londen
16. Technicolor - Londen
17. Ritz - Oxford
18. Savoy - Leicester
19. Forum - Southampton
20. Odeon - Hanley
21. Odeon - Norwich
22. Regal - Glasgow
23. Carlton - Nottingham
24. Olympia - Cardiff
25. Regal - Hull
26. Regal - Edinburgh
27. Bristol - Birmingham
28. Odeon - Bournemouth
29. Odeon - Portsmouth
30. Odeon - Aberdeen
31. Astoria - Londen
32. Odeon - Middlesborough
33. Odeon
34. Ritz - Leeds
35. White Ladies - Bristol
36. Capitol - Dundee
37. Scala - Worcester
38. Empire - Londen
39. Metropole - Londen

Waaronder 20 bioscopen van de Rank Organisation

Zweden

1. Ritz - Stockholm
2. Scania - Malmö
3. Vinter Palatset Stockholm
4. Palladium - Malmö
5. Garbio - Stockholm
6. Capitol - Stockholm
7. Astoria - Stockholm

Denemarken

1. Falco Bio - Kopenhagen
2. Palladium - Kopenhagen

Behalve aan deze bioscopen werd door Philips aan tientallen theaters over de gehele wereld TODD-AO projectoren geleverd.

PHILIPS

Philips heeft de grootste en langste ervaring op dit gespecialiseerde terrein

Ook in Nederland

Naast het Asta Theater Den Haag heeft thans ook de

PARADE BIOSCOOP te 's-HERTOGENBOSCH

de Philips Todd-AO installatie op eclatante wijze in gebruik genomen

Verdere opdrachten tot levering werden ontvangen van:

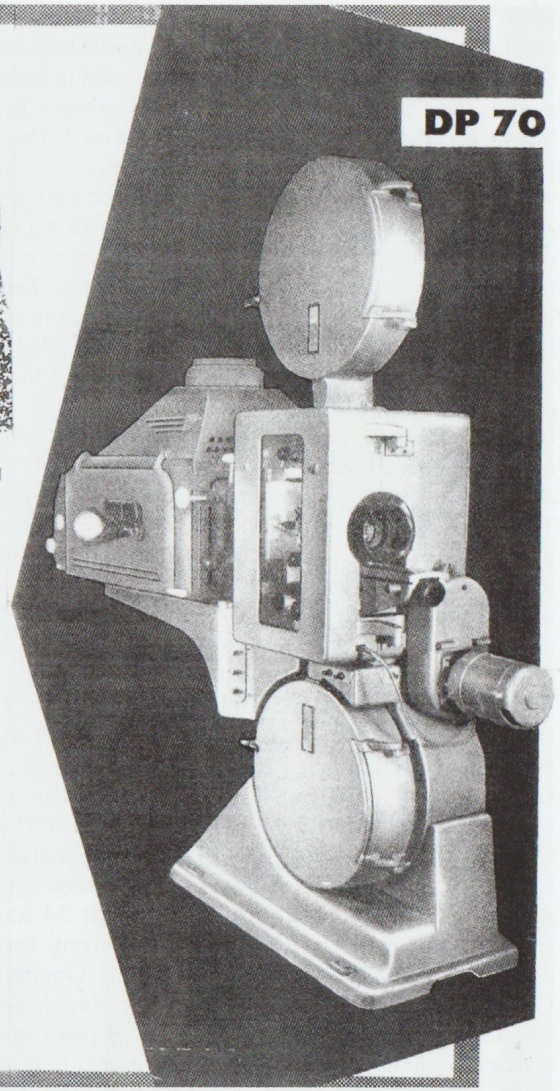
Corso Theater - Rotterdam
Jogchems Concern - Den Haag
Metropole Theater - Den Haag
Theater 'du Midi' - Amsterdam

PHILIPS

voor perfectie in geluid en projectie

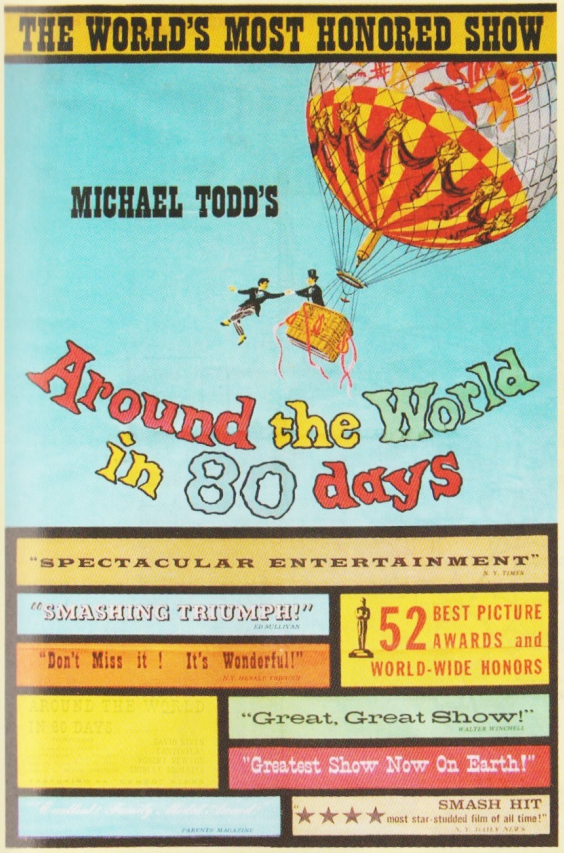
PHILIPS
BEDRIJFSAPPARATUUR
NEDERLAND n.v.

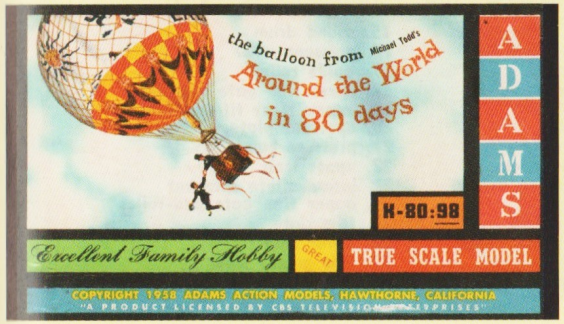
Groep Elektro-Akoestiek
EINDHOVEN Tel. 33333 - toestel 6097

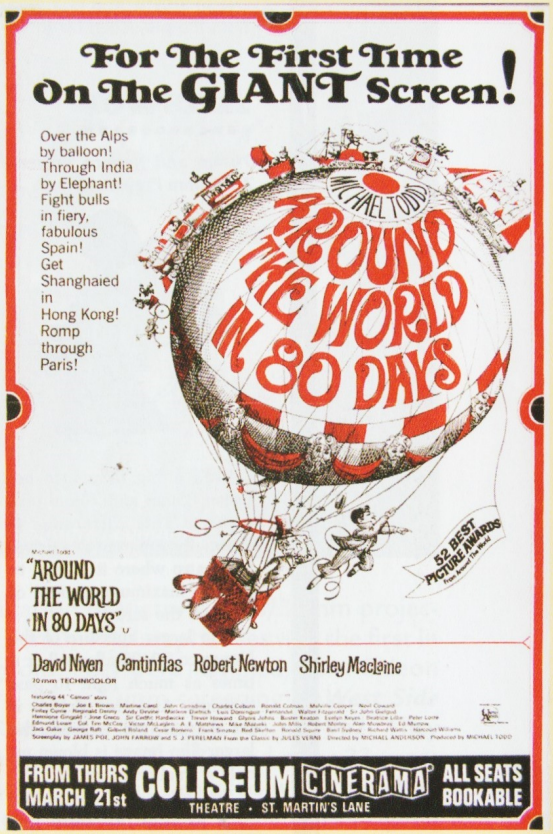


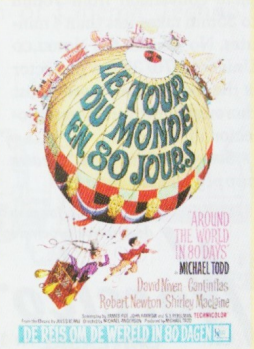
A two page advertisement from 1960 reads as follows: Philips Todd-AO 70/35mm projectors all over the world! For some years now Philips provides these unique machinery on behalf of big theatres in the USA and Canada. (Names of 59 cinemas in USA and Canada). Also in Europe many theatres were equipped with Todd-AO machines, a.o. (names of 58 European cinemas). Except these cinemas, Philips has also delivered Todd-AO machines to tens of theatres all over the world. Philips has the greatest and longest experience on this specialized domain. Also in The Netherlands, besides the Astra Theatre in The Hague, the Parade Cinema in Den Bosch had their Todd-AO installation put into operation in a striking manner. More orders for supplies were received from Corso Theatre, Rotterdam, etc. Philips for perfection in sound and projection. PHILIPS COMPANY MACHINERY THE NETHERLANDS n.v.

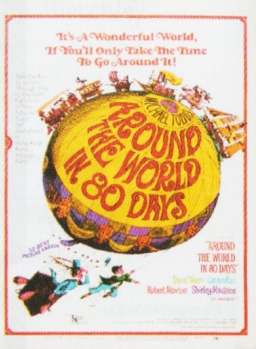
Michael Todd's 'Around the World in 80 Days'









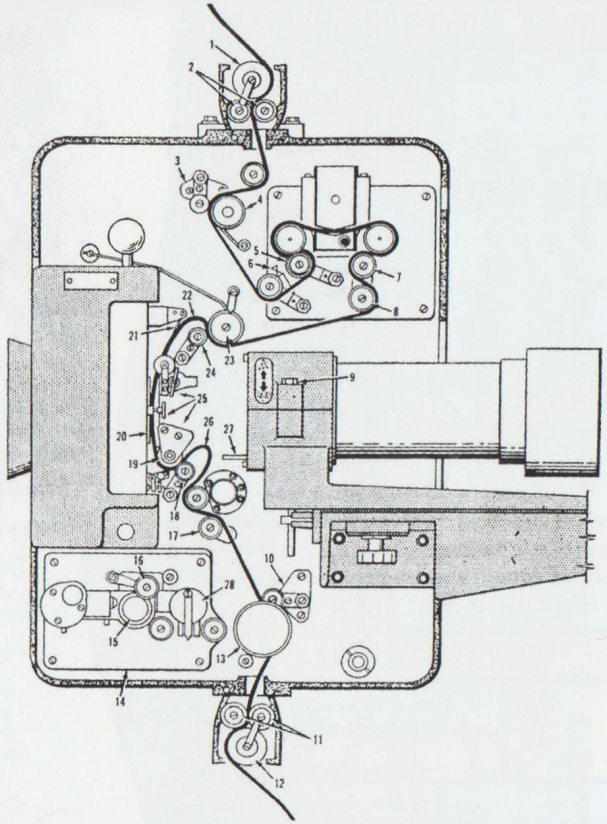


DP 70: The Dollar Princess

After careful investigations the Philips Company in The Netherlands was chosen by American Optical Company as the best qualified company to design and manufacture the projection equipment for Todd-AO 70mm film. The new equipment would accomodate either 70mm or 35mm film and capable of reproducing any of the existing sound systems. In the late 1953 Michael Todd approached the Philips Company and ordered fifty 70mm projectors.

It takes less than 5 minutes to change from 35mm to 70mm film. The magnetic sound head, from anti-magnetic chromium steel, is equipped with ten tracks, six for the 70mm film and four for 35mm CinemaScope films. All the sprockets have two sets of teeth, the outer section is for 70mm film, the inner section for 35mm film. Todd-AO films were intended to be running at 30 fps instead of the normal 24 fps. This was done to reduce flicker of the film on the screen and to give greater stability to the rapid moving images. The speed was changed after the first two Todd-AO movies to the normal 24 fps. The total power consumption of the DP 70 is 1380 Watt. It was very heavy, more than 500 kilos and was constructed of die cast iron steel. Often the floor of the projection box had to be strengthened. It's successor the DP 75 (1966) was less heavier because a construction of sheet steel.

Just some weeks before the opening of ***Oklahoma!*** on Broadway in October 1955 fifty DP 70 were shipped from The Netherlands to the United States. In 1963 the Philips Company was awarded with an Oscar for the design and the construction of this universal 70/35mm projector. For the North American market the projectors were assembled by the North American Philips Company as Norelco AA 11 Universal. The DP 70 – Double Projector – in production more than 10 years was a great financial success for the Philips Company, who spend a lot of money for advertising . It was called the Dollar Princess. Users called the machine the 'Rolls Royce' among 70mm projectors!

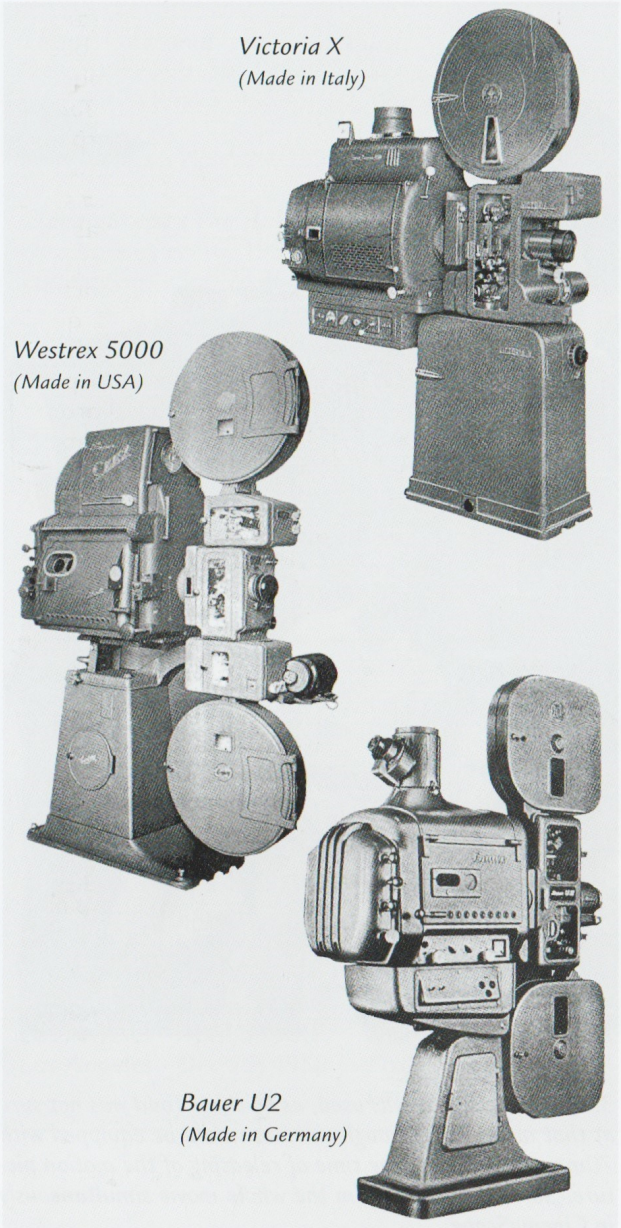


Numbers show the film path for magnetic sound on a Todd-AO projector

1. upper fire trap guide roller
2. upper fire trap rollers
3. upper pad-roller
4. upper feed sprocket
5. nylon pressure roller
6. tension indicator
7. piloting guide roller
8. adjustable guide roller
9. lens mount clamping bolt
10. lower pad-roller
11. lower fire trap rollers
12. lower fire trap guide roller
13. hold back sprocket
14. optical sound unit
15. sound drum
16. pressure roller
17. guide roller
18. lower film gate pad-roller
19. intermittent film sprocket
20. aperture plate
21. pressure bands
22. upper loop
23. intermediate sprocket
24. upper film gate pad-roller
25. film gate
26. lower loop
27. lens mount lever
28. exciter lamp housing

Classic 70mm Projectors

by Nigel Wolland



Victoria X
(Made in Italy)

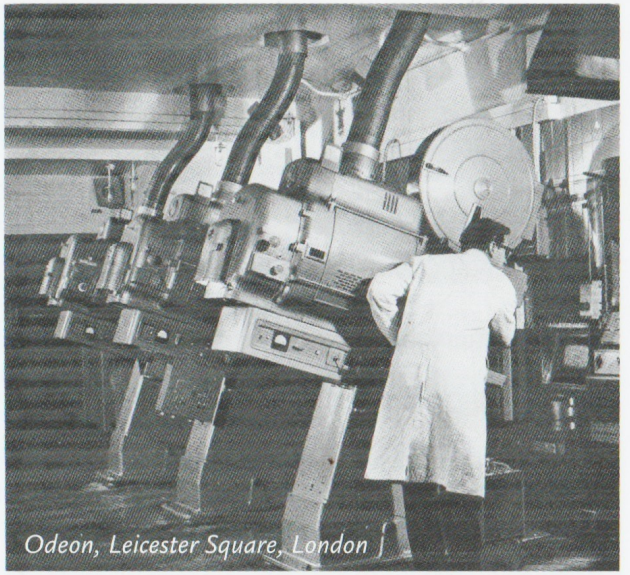
Westrex 5000
(Made in USA)

Bauer U2
(Made in Germany)

CINEMECCANICA VICTORIA X
70/35mm Multi-Purpose Projector

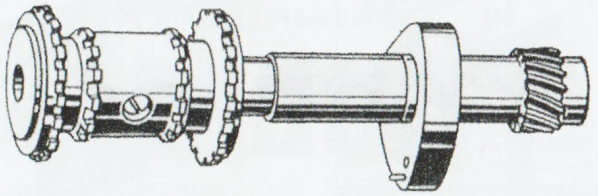
The Victoria X 70/35mm Multi-Purpose Projector was manufactured in the Cinemeccanica factory in Milan. From the late 1950s until 1964. It was discontinued because it was much more expensive to produce than the Victoria 8 (launched in 1961) which became very popular, so much so that it is still produced today after nearly fifty years. The Victoria X was a top design in its days for the motion picture industry, completely versatile and instantly interchangeable from 35mm to 70mm, handling six track and four track as well as optical sound. The film mechanism including the optical sound head was mounted on a heavy projector base with the lamphouse supported on a cantilevered beam behind. The inside of the base on the operating side was the lower spool box, and the rear housed the independent take up motor, gate cooling fan (the film gate could also be water cooled) main terminal board and exciter lamp supply.

For the film interchange from 35mm to 70mm the film gate and plates could be quickly and accurately inserted and locked into the operating position, with the large diameter dual purpose sprockets and intermittent having the eccentrically mounted 35/70 rollers simply turned and locked for the required operation, also including the rollers and cluster on the magnetic sound head. Lubrication for the projector was effected by a geared pump with filters distributing the lubricant to all the bearings and gears with the high efficiency barrel shutter driven through a special shock absorber joint. The Victoria X could also be equipped with a three lens turret, and a 35mm only version was available, easily converted to 70mm if and when required.
All in all a very versatile machine, and in the words of Cinemeccanica managing director Vittore Nicelli: "The best we ever made."



Odeon, Leicester Square, London

This triple installation of Victoria X 70/35mm projectors with Super Zenith 450 lamphouses was the first in the United Kingdom, They were installed at the Odeon Leicester Square. for a 70mm screening of ***West Side Story*** for the Royal Film Performance in 1962. They remained in the theatre until 1983 and after 23 years of valuable service they were replaced with three Victoria 8 70/35mm projectors. One of the three original Victoria Xs is still in use today at the Projected Picture Trust, Museum of Cinema Technology in Bletchley Park. UK.



DP 70 sprocket wheel

On the set of 'Oklahoma!'

Robert Surtees, Director of Photography for Rodgers and Hammerstein's Oklahoma! sits high in the air with the Todd-AO 70mm camera with the very large 'bug-eye' Todd-AO lens. Down in front two other cameras: left another Todd-AO camera and in the middle the special CinemaScope 35mm camera that was used, as Michael Todd was not sure at that moment, if enough cinemas would be equipped with 70mm projectors at the time of releasing of the motion picture. So he decided to film the whole movie simultaneously in CinemaScope.

Dates in the States

compiled by Michael Coate and Johan Wolthuis

This is Cinerama

New York - Sep. 30, 1952	Broadway (36 weeks)
New York - June 5, 1953	Warner (+ 87 wks) (moveover)
Los Angeles – April 29, 1953	Warner (133 wks)

CinemaScope (The Robe)

New York - Sep 16, 1953	Roxy
Los Angeles - Sep 24 1953	Mann's Chinese

Oklahoma! (Todd-AO 70mm)

New York - Oct.13, 1955	Rivoli (51 wks)
Los Angeles - Nov 17 1955	Egyptian (51 wks)
Los Angeles - Dec 24,1955	United Artists (52 wks)

Oklahoma! (35mm CinemaScope)
Theatres unknown - Oct 1956

Around the World in 80 Days

New York - Oct. 17, 1956	Rivoli (103 wks)
Los Angeles - Dec 21, 1956	Carthay Circle (128 wks)

South Pacific

New York - March 19, 1958	Criterion (29 wks)
New York - Oct 7, 1958	Rivoli (+ 25 wks) (moveover)
Los Angeles - May 21, 1958	Egyptian (44 wks)

Porgy and Bess

New York - June 24, 1959	unknown (30 wks)
Los Angeles - July 15, 1959	Carthay Circle (28 wks)

CineMiracle (Windjammer)

New York - April 9, 1958	Roxy (24 wks)
Los Angeles - April 8,1958	Mann's Chinese (37 wks)
Los Angeles - Dec 25, 1958	Fox (+ 15 wks) (moveover)

Other European opening dates

This is Cinerama

London Sept 30, 1954	Casino (> than 2 years)

CineMiracle

London May 13, 1958	Odeon (24 wks)

TODD-AO (introduction in Europe by the Philips Cy.)
The Miracle of Todd-AO + 1 reel ***Oklahoma!***

Cologne - Germany	Sep 1956, Photokina
The Hague, The Netherlands	July 1957, Holland Festival Kurhaus

Oklahoma! In Todd-AO 70mm

Hamburg - March 1957	Savoy
London - December 1959	Metropole

Around the World in 80 Days (34mm!)

London - July 2, 1957	Astoria (< 2 years)

Around the World in 80 Days (70mm)

London - Dec 17, 1968	Astoria

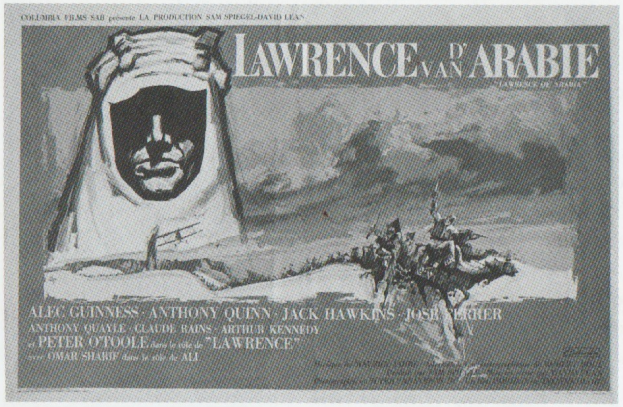
South Pacific

London - April 1958	Dominion (< 5 years)

The Legend of 'Lawrence of Arabia' A film by David Lean

On May 22, 1935, the London Times announced : "After a week of hope and fear, a commonplace accident has robbed the nation of one of its most remarkable personalities. Lawrence of Arabia is dead!"

Among the people who said they knew him, was prime minister Winston Churchill, who wrote: "In Colonel Lawrence we have lost one of the greatest beings of our time. I had the honour of his friendship. I knew him well. I hoped to see him quit his retirement and take a commanding part in facing the dangers which now threaten the country. No such blow has befallen the Empire for many years as his untimely death."



Thomas Edward Lawrence as his official name was, became a legend, despite his life ended at the age of 47! His death caused a stream of publicity, more than he had known during his adventurous life in the Arab region and the legend kept growing. Even the accident on a small road that was responsible for his decease was discussed in the papers. Did he commit suicide? What about the mysterious black limousine that was seen on the spot? The most likely explanation however, was that he tried to avoid two boys on a bicycle, but his speed was too high! All his other names passed through the newspaper pages: Hero of Aqaba, Liberator of Damascus, Uncrowned King of Arabia. The Bedouin Sheiks called him 'Prince Dynamite' after his heroic attack against the Hejaz railway in the desert. But to the ordinary Bedouin tribesmen he was 'El Aurens' as they had problems with the 'L' of Lawrence. He was a fighter like them, a brother-in-arms of Auda ibu Tayi, chief of the Howeitat tribe fighting against the Turkish Army. He also was a scholar, thinker and a flamboyant gentleman but also a man of action, decision which was sometimes strange and harsh. Nevertheless after his death his legendary image rose to unprecedented height and he was often called the 'Hero of Arabia'.

Despite all his adventures and busy life, Lawrence found the time to keep his diary and write his own story. He called it 'The Seven Pillars of Wisdom'. The first edition was of only 212 copies, beautifully printed and bound in leather. These were for those who had pre-ordered a copy. He could see, however, that the book was not going to make a profit with this expensive format, so he hastily created an abridged version with the more popular title 'Revolt in the Desert'. This became a best-seller and he was able to pay off his debts.

Producer Sam Spiegel, born in Austria, became fascinated by reading 'The Seven Pillars of Wisdom' and was thinking of making a film on the subject. He was already talking with director David Lean with whom he made '***The Bridge on the River Kwa***i' to make a film about the life of Ghandi. When Spiegel acquired the filmrights of Lawrence's autobiographical book in February 1960, he and Lean decided that their next project should be '***Lawrence of Arabia***'. They realised it would be a very complicated and difficult project, but seeing their previous cooperation they had much confidence in succeeding. When the screenplay was ready they were immediately confronted with one of the greatest problems: the casting of the main characters. After a long search their choice fell on Peter O'Toole, a young Irish rising star of the Royal Shakespeare Theatre, 28 years old. Omar Sharif, a famous actor known in the cinemas in the Middle East was introduced in his first role in a European movie, as Sheik Ali ibn el Karish of the Harith tribe, friend and sometimes teacher of Lawrence. Alec Guinness got the role of Prince Feisal while Antony Quin was the most suitable actor to play the Bedouin Sheik Auda ibu Tayi, a larger-than-life character!

When David Lean visited Jordan searching for locations, he found in the desert a landscape of unprecedented beauty and when they discovered the wreckage of the trains just as Lawrence had left them forty years ago the decision was quickly made by Spiegel and Lean that Jordan would be the main location for the filming. They were very lucky with the cooperation of King Hussein of Jordan who was very interested in the film project. By his order they got a lot of assistance from the camel riders of the Jordan army and he secured the participation of hundreds of Bedouin fighters. They were filming five months in Jordan,

A MIGHTY MOTION PICTURE
OF ACTION AND ADVENTURE!

Columbia Pictures presents The SAM SPIEGEL · DAVID LEAN Production of

LAWRENCE OF ARABIA

ALEC GUINNESS · ANTHONY QUINN
JACK HAWKINS · JOSE FERRER
ANTHONY QUAYLE · CLAUDE RAINS · ARTHUR KENNEDY
OMAR SHARIF as 'Ali' · PETER O'TOOLE as 'LAWRENCE'
ROBERT BOLT · SAM SPIEGEL · DAVID LEAN
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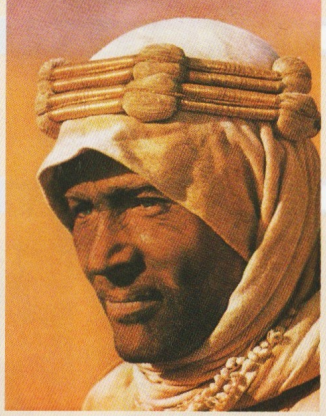
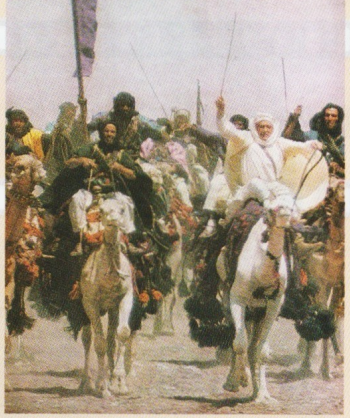
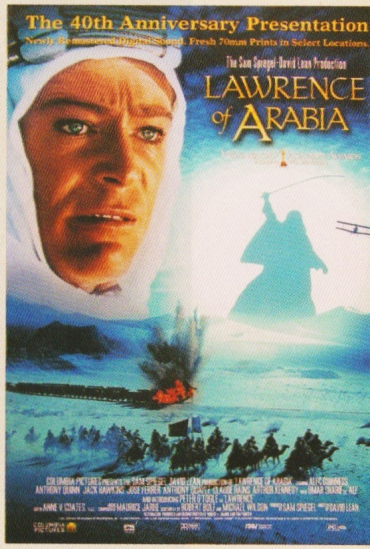
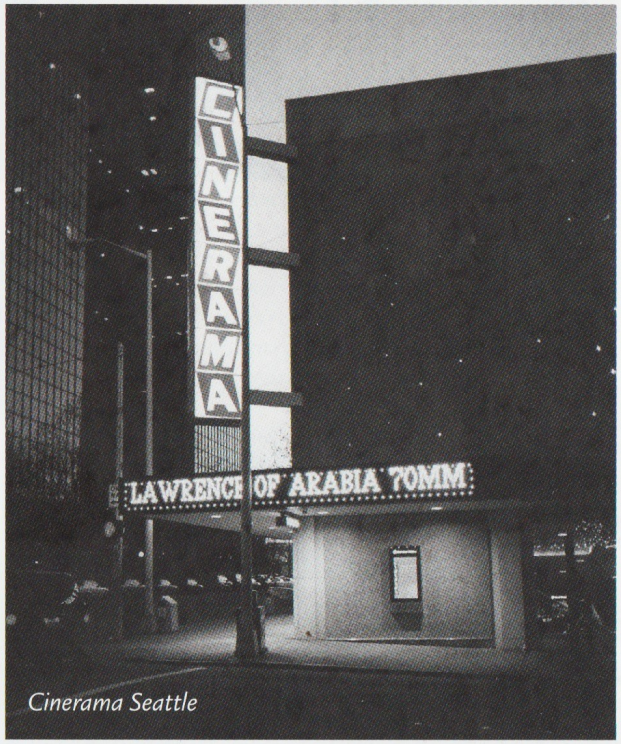






The Legend of 'Lawrence of Arabia'



Cinerama Seattle

where all the spectacular desert scenes were shot in the Wadi Rum desert. Because the cities of Cairo, Damascus and Jerusalem could not replicate the period of time David Lean sought, locations were transferred to Spain, such as Sevilla, which retained a good deal of the Moorish architecture he was looking for. The impressive attack on the Hejaz railway was also filmed in Spain, as was the attack on Aqaba. This city on the Red Sea was completely rebuild on a Spanish site as it was in 1916 and the attack was one of the greatest attractions for the Spanish people who were gathered at the surrounded hillsides. However the great battle against the Turkish army, was filmed in the deserts of Morocco. Here also with Royal cooperation of King Hassan II who supplied the crew with hundreds of foot-soldiers, horses and camel riders..We must not forget to honour Fred A. Young, Director of Photography who made history in the Jordan desert with the unprecedented amazing photography in the Wadi Rum desert with the large Super Panavison 70 cameras! Nowadays this location has become a famous place for tourists because of the images in the film.

Because it was shot in 65mm, David Lean wasn't able to see any results until he returned to Britain. There he was involved in three sessions of three hours each, nine hours in total, to see the rushes from the Jordan location alone! But with a qualified cinematographer as Freddie Young he was certain of the material he wanted. They were a couple of months in Spain and another two months in the desert in Morocco south of the Atlas Mountains a very hot place. The film has cost in total 12 million dollars, quite a contrast to the three million dollars for ***The Bridge on the River Kwai***, Leans previous filmproject .

'Lawrence of Arabia' was a legendary name in British history! But the motion picture '***Lawrence of Arabia***' was one of the most famous and legendary original 70mm films ever made by famous British director David Lean. It is hard to believe that the whole story of the film encompasses only two years in the life of Lawrence when he was detached as a British Officer in Cairo.
Lean worked for three years on the film and he also supervised the editing of his film, being an experienced editor, which was the start of his career in film business. The film received seven Oscars in 1963: Best Picture, Best Director, Best Editor (Anne V. Coates), Best Cinematography (Freddie Young), Best Sound, Best Art Direction and Best Film Music (from famous French composer Maurice Jarre). There was a special Royal Performance for the Queen on December 10, 1962 in London. It premiered at the New-York Criterion theatre on December 16, 1962 in a three hour, 46 minutes version. One month later it was cut to 3

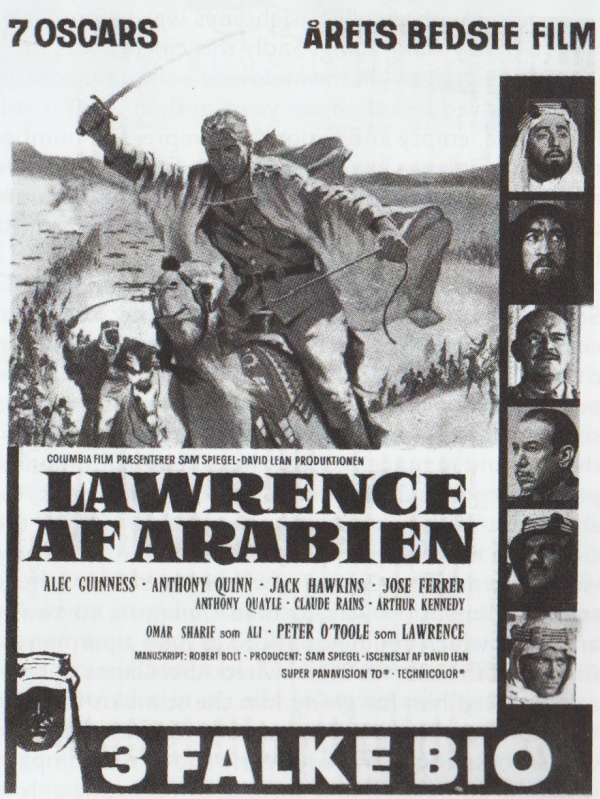
hours and 22 minutes because the distributors were afraid general audiences would be dissuaded by the length. Lean and Spiegel quickly decided to shorten this 3 hrs. 22 mins version with another 20 minutes to 3 hrs. 02 mins. It was this version that went in triumph around the world! Later on, Columbia cut another 15 minutes to make the movie more acceptable for TV screening!

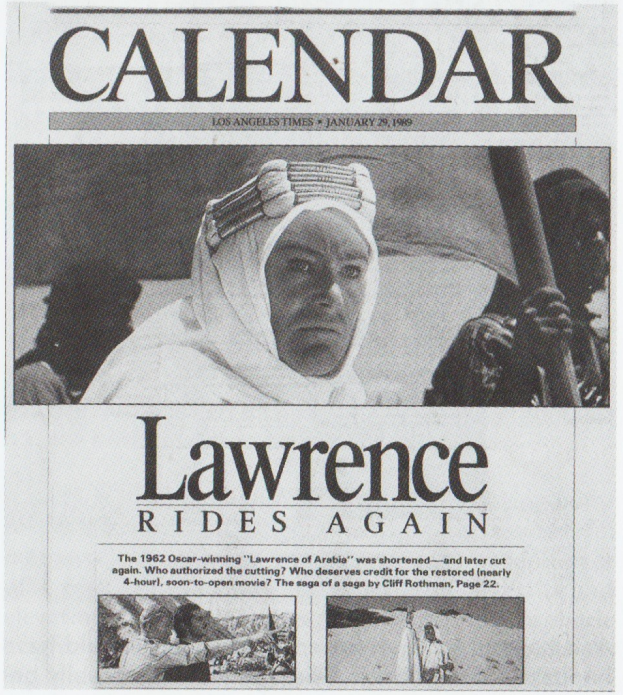
Nearly 25 years later, in December 1986 Robert A. Harris and Jim Painten started with their painstaking restoration work through 6000 pounds of film bits and pieces! Harris found that the soundtrack for the missing twenty minutes had been lost, so principal actors Peter O'Toole, Omar Sharif, Sir Alec Guinness, Anthony Quinn and Arthur Kennedy, all fortunately still alive but 27 years older, were engaged to record sections of the missing dialogue. In the middle of the expensive restoration process Columbia Pictures or-

dered a stop, which led to a heavy dispute with Richard Harris. Dark clouds on the horizon and it seemed Lawrence would never ride again! But luck was with Harris as two famous filmmakers came aboard, Martin Scorsese and Steven Spielberg, both "Lawrence" fans, they assisted in solving the problems and the restoration went on. The whole restoration project took nearly two and a half year.
With some restored, never seen scenes, the film is now 3 hours. 37mins, quite near the first original print in 1962. The New York premiere of the restored 70mm version was on 12 February in the famous Art Deco Ziegfeld Theatre (1300 seats) and on 4 February 1989 in Los Angeles in Century Plaza. This great example of epic cinema should be seen with the newly restored 70mm print on a large screen, wall to wall in a beautiful auditorium!

Let us end with the words of Martin Scorsese: "It was one of my greatest cinema experiences - seeing the curtains wide open, hearing the Overture and than watching such an extraordinary film with a cast that you will never see again!"

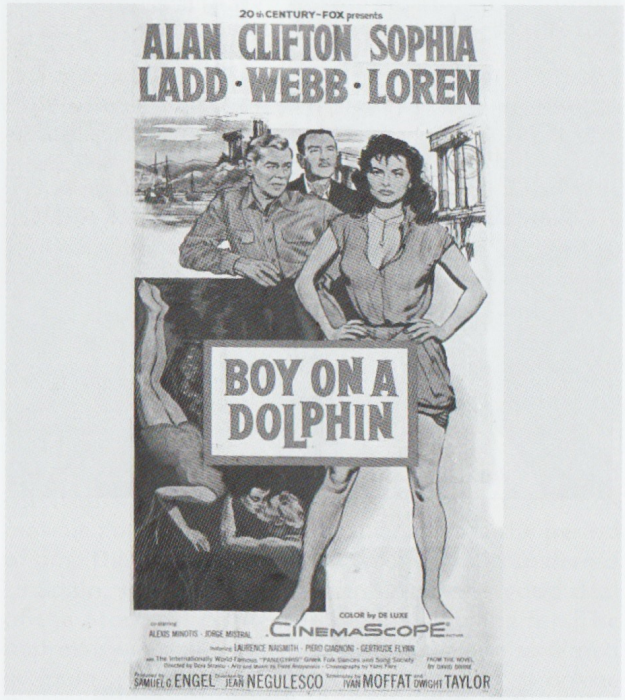
This is a classic that has to be screened once a year!





Fond Memories of Widescreen in the UK

Although he has been a headteacher for most of his working life Terry Ladlow has been immersed in the aura of cinema and film for as long as he can remember. As a young boy he had his own cinema in the attic where he invited his friends and as a teenager he worked as a relief projectionist in several cinemas in Yorkshire. He still remembers the excitement of showing ***Boy on a Dolphin*** in CinemaScope with 4-track magnetic sound at the Empire in Rotherham for a week when he was 17.



And he continues: "Heaven knows what would have happened if a technical glitch arose! I eventually became a teacher and during this time produced ten 16mm educational films which were distributed worldwide - I even had an American distributor: the International Film Bureau in Chicago who dealt with North American sales. So cinema, and particularly widescreen, is in my blood!"

Naturally I was one of the first to go and see ***This is Cinerama*** at the casino in London and searched avidly for similar cinematic experiences afterwards. I saw all the Cinerama features at the Casino that were presented there and also experienced Cinerama at other venues to compare their impact. The Coliseum Theatre in London, now home to the English National Opera Company, was an impressive place to see Cinerama and some 70mm presentations during the 1960s; I saw ***King of Kings*** in 70mm in it's magnificent auditorium. Then 70mm installation was the pre-eminent factor in upgrading a cinema to a high-class visual experience with it's clarity, size and dynamic stereophonic sound. Wherever I lived or worked, I searched for these presentations.

When in London I enjoyed 70mm presentations at the Dominion in Tottenham Court Road showing ***Oklahoma!*** Across the road was the Astoria where Todd-AO was installed with it's severely curved screen – this is where I enjoyed ***West Side Story*** and and ***Exodus.*** The Metropole Theatre near Victoria Station seemed a mausoleum of a place, lofty and vast where ***El Cid*** in 70mm looked splendid. The Odeon in Leicester Square, the vanguard of supreme cinema in the UK, is where I soaked up the wonder of ***Lawrence of Arabia*** and ***Sound of Music*** and several other 70mm of spectaculars. Interestingly, when Lawrence of Arabia was re-released in a 'Director's Cut' by David Lean at the Odeon, Marble Arch in London, he wouldn't agree to the film being shown there unless they installed a flat screen - the curved Todd-AO screen wasn't acceptable to him! So the Rank Organization reluctantly agreed to this. The Royalty Cinema behind the old Stoll Theatre in Kingsway took up the Cinerama and 70mm mantle and I went there several times though the smaller size of the venue diminished the impact of 70mm somewhat. But size wasn't always a vital factor as it was the high definition that was so important too. The Odeon in Haymarket was a fairly new cinema built underground where I saw ***Barabbas*** one of the 70mm presentations I enjoyed there.

70mm was the prestigious film presentation out in the provinces too. Some venues were more successful than others in creating the quality film experience the format deserved. The Majestic Theatre in Leeds had an impressive screen where 70mm made you feel part of the action and they ran successful roadshows, one of which I remember was ***Dr. Dolittle***. A new Odeon Cinema at the Merrion Centre in Leeds was built with 70mm as a vital architectural feature. A stadium-type auditorium with excellent sightlines was where I saw ***Chitty Chitty Bang Bang***. Sadly this cinema was built in the wrong place - in the middle of a shopping centre - and survived less than ten years and, in 2010 is still lying there, empty and forlorn. An impressive number of Odeon cinemas were re-built or re-furbished to give an excellent 70mm presentation some with Cinerama curved screens (Sheffield, Bournemouth being just two I remember with affection).

Seeing Cinerama at the London Casino was even equalled in thrills by seeing it in the Itinerama tent theatre! Nicholas Reisini had seen Abel Gance's ***Napoleon*** in Paris in 1927 and went over to the States to see Cinerama in the early 1950s. He was totally enthralled and managed to join the Cinerama Company, persuading it to allow him control of European presentations. With this power, he then wanted to give the Cinerama experience to people all over Europe by providing a travelling Cinerama show housed in a huge tent. His intention was to take Cinerama to towns and cities which could not afford to have a permanent Cinerama theatre. He even invited Abel Gance to see it and thanked him for giving him the stimulus to bring Cinerama to Europe. The touring Cinerama proved very successful but tragedy nearly ended the company when the air-inflated tent collapsed in a strong gale in

France due to anchoring problems in wet conditions. Fortunately no-one was in the tent at the time or else there could have been several fatalities and injuries. Determined to improve the venue, he had the tent re-designed and it was at this point that the tent became

Cinerama Tent Theatre

known as Itinerama which seated nearly 3,000. The screen size was very impressive and rivalled many Cinerama theatre locations.

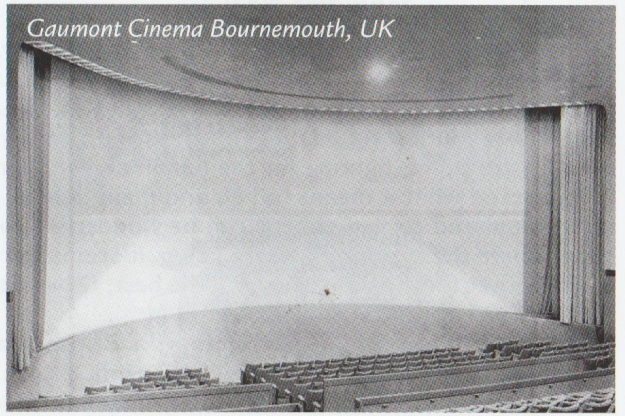
One unusual widescreen experience which was not replicated widely, was the Arc-120 system which I saw with a packed audience at the now demolished Palace Cinema in Blackpool. This was ***Honeymoon*** shown at a few venues in Arc-120 which was trying to copy Cinerama on a smaller budget. This was shown with one twin-lensed 35mm projector onto a wide curved screen with the join in the middle of the picture! Going into the Palace Cinema on a wet afternoon with a crowded auditorium made the experience that bit special. Although Arc-120 was created with the smaller cinema in mind, the Palace didn't exactly fill that criteria as it had 1972 seats and was owned by the prestigious Blackpool Tower Company. The screen was impressive in it's size in endeavouring to imitate Cinerama - but with the join in the centre! With it's large cinemas and theatres in Blackpool it was left to smaller independent cinemas there to capitalise on the widescreen experience. The Palladium to the south of the resort was the showplace for 70mm roadshow presentations and I fondly remember going inside there in 1995 when it had been a bingo hall for many years and visiting the cocooned projection room still with it's 70mm Cinemeccanica projectors. The Regent, in central Blackpool, with just over 1,000 seats was the first cinema to use CinemaScope with 4-track stereophonic sound in the resort.

I think the Odeon in Tottenham Court Road, London was the only cinema in the UK to show ***Windjammer*** in Cinemiracle. Great presentation and it looked marvellous on their super sized curved screen. It didn't last long though and the cinema was demolished soon afterwards. During the hey-days of 70mm I cannot remember ever going to a show when the cinema was less 90% full. I guess that was the same for cinemas around the world because the format gave impact, vitality, true high-definition, dynamic stereo-sound and a first class experience.

As a film-maker in the 1980s I tried to emulate the widescreen experience by making four 16mm CinemaScope films to show to groups all over the UK. Little village halls were my venue and a 16 foot Sidewinder screen my window on English heritage. I loved every minute of it when I was showing the films and felt I was providing a mini-version of the great experiences of the widescreen era.

We are lucky in the UK in having the National Media Museum in Bradford with two cinemas: an Imax Cinema and the Pictureville Cinema where virtually all film formats can be shown and presentation is a feature which is so often denied us today. ***This is Cinerama*** is screened once a month using the only 3-strip process installation in Europe. It is a venue we British are proud of because it can still give us the thrill and first class experience we remember from the 'good old days' of 70mm and Cinerama!

The 70mm presentation represented a special occasion, a 'roadshow' experience, where it was made to feel like a big event. It was projected on a **big** screen and hit you in the eye with it's impact and dynamic

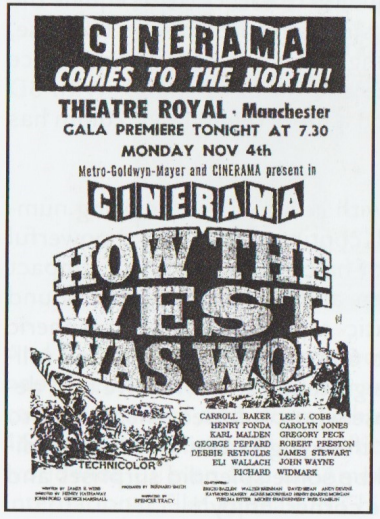

Gaumont Cinema Bournemouth, UK

clarity and sound. Today most multiplexes **have** big screens and the projection light output usually gives us a vibrant picture quality that is close or equals the 70mm we enjoyed. It's certainly not always the case, but, generally speaking the new cinema experience is one which gives size and dynamic sound. With 3D coming into it's own on a more refind level, 70mm has a steep hill to climb.

It sounds bleak and with celluloid's day's being numbered, the format will continue to be just a powerful memory. A memory of halcyon days with the impact of a **big** 70mm screen and wondrous stereo sound elevating the cinematic experience to stratospheric heights in the 50s and 60s. Cinerama set the ball rolling and we should be grateful for the resolve and determination of all those who could see cinema had to change - like now, it's changing in a wildly different direction and there will be some splendid surprises and sensations around the corner. Enjoy!!

Statement

During the annual 'Widescreen Weekend' in 2005 in the Pictureville Cinema in Bradford, UK, a 'Statement' was presented to the audience ***with a request to directors and producers for a rebirth of original 65/70mm filming and presentation.*** It was signed by the majority of the visitors in Bradford. More than 30 copies of this Statement on special paper with copies of all the signatures and additional 70mm information were mailed to important producers and directors in Hollywood and to magazines like Daily Variety, Hollywood Reporter, American Cinematographer, etc. With a disappointing result: no publicity, only one reaction from director Oliver Stone. He wrote us: "Dear mr. Wolthuis, I appreciate your invitation, but I find myself overwhelmed with obligations at this point: fighting for the 65mm camera is not in my cards. I understand what it means to you and many others. It was a beautiful medium and curved screens can be wonderful. Sometimes I don't know where the entire business is going. It seems the home flat sceen will take over for the time being. All the best, Oliver Stone." Thus written on May 31st, 2005!
Simply and solely Cinema Technology, a British magazine had the Statement published. The Pictureville Cinema is part of the National Media Museum in Bradford and it has unique facilities for Cinerama with 3 projectors on a wide curved screen (the only venue in Europe!) and for 70mm screenings in a beautiful auditorium.



Statement

* 250 delegates from all over Europe and America, were celebrating the 50th Anniversary of the **TODD-AO 70 mm** process at the Widescreen Festival at the National Museum of Photography, Film and Television In Bradford, United Kingdom.

* **Why did 250 people travel** thousands of miles to Bradford to the 11th Annual Widescreen Weekend in March 2005 ? **Why** was the auditorium packed with an excited, happy audience when the films they were to watch, were not the latest blockbusters ? **What** was so special there ? The answer is **Widescreen 70mm Formats and Cinerama !** They wouldn't have travelled thousands of miles to see these films on standard 35mm. They wanted to see something special !

* They saw a lot of famous Todd-AO 70mm films, (mostly beautiful new prints) like **"Oklahoma!", "Hello Dolly", "The Sound of Music",** "Those Magnificent Men in Their Flying Machines", "Star", "The Agony and the Ecstasy" and "Baraka".
All these motion pcitures were filmed with 65mm cameras, as were the epics **"Lawrence of Arabia", "2001, A Space Odyssey", "Ben-Hur", "Cleopatra",** "Spartacus", "Ryan's Daughter", "It's a Mad, Mad, Mad, Mad World", etc.

* The abandoning of the 70mm Formats in the film and cinema industry **is surely a great loss !** Digital projection advances slowly forward, but **original high quality 70mm films,** projected on a large curved screen still surpass the best digital projection and will continue to do so for the conceivable future !

* The majority of delegates, gathered at the Widescreen Festival, **would like to make a strong appeal to directors, producers and other decisonmakers in the film and cinema industry, to put new life into original 70mm filming and presentation.**
Large cinemas should present something people cannot see at their home cinema: something which is superior to flat screen digital projection: high quality 70mm films, projected on a large curved screen, wall-to-wall ! And 70mm films on the big screen are difficult to copy by means of a video camera, etc. therefore an excellent weapon against piracy ! Many Directors of Photography would like the opportunity to work with 65mm cameras and would love to see original 70mm presentation return. There is a demand for high quality.

Cinemas need a new attraction and that is NOT digital projection !

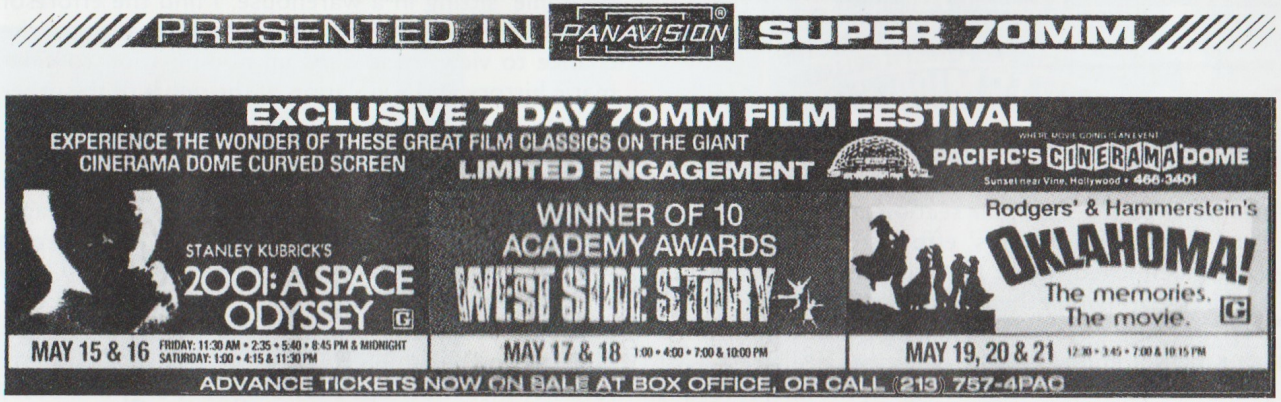
* Messrs. **Steven Spielberg, Martin Scorsese, James Cameron, Robert Zemeckis, Oliver Stone** and others, should use once in their life the 65mm cameras for an epic 70mm motion picture production. And Mr. **Ron Howard,** experienced 70mm producer: your second chance, try the 65mm cameras another time : now for the filming of "The Da Vinci Code" !

Bradford, United Kingdom, 14 March 2005

Responsible publisher: International 70mm Publishers, The Netherlands.

Large Screen Formats

		Negative	Projection:
1952	Cinerama ***This is Cinerama***	3x35mm – 6 perf – (non-an)	3 x 35mm +1 x 35mm for sound
1953	CinemaScope ***The Robe***	35mm (an)	35mm (an)
1954	VistaVision ***White Christmas***	35m horizontal (non-an)	35mm (an)
1955	Todd-AO ***Oklahoma!***	65mm (30 fps) (non-an) 35mm (24 fps) (an)	70mm – 30 fps CinemaScope 24 fps
1956	Todd-AO ***Around the World in 80 Days***	65mm (30 fps) (non-an) 65mm (24 fps) (non-an)	70mm 30 fps 70mm 24 fps 35mm CinemaScope
1956	CinemaScope 55 ***Carousel***	55mm (an)	35mm CinemaScope
1956	CinemaScope 55 ***The King and I***	55mm (an)	35mm CinemaScope 70mm Grandeur
1957	MGM Camera 65 ***Raintree County***	65mm (an)	35mm (an)
1958	CineMiracle ***Windjammer***	3x35mm – 6 perf (non-an)	3 x 35mm (non-an)
1959	MGM Camera 65 ***Ben-Hur***	65mm (an)	70mm (an)
1959	Super Technirama 70 ***Solomon and Sheba***	35mm (VistaVision type)	70mm (non-an)
1960	Super Panavison 70 ***The Big Fisherman***	65mm (non-an)	70mm (non-an)
1962	Ultra Panavison 70 ***Mutiny on the Bounty***	65mm (an)	70mm (an)
1964	Super Panorama 70 ***Flying Clipper***	65mm (non-an)	70mm (non-an)
1966	Dimension 150 ***The Bible***	65mm (non-an)	70mm (non-an)
1970	Imax/Omnimax ***Tiger Child***	65mm horizontal (non-an)	70mm horizontal (non-an)
1994	Arriflex 765 ***Little Buddha***	65mm (non-an)	70mm (non-an)
			('an' = anamorphic; 'non-an' = non anamorphic)



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George Gershwin's opera 'Porgy and Bess'

At a press conference on May 8, 1957 producer Samuel Goldwyn proudly announced that he had acquired the screen rights for the filming of ***Porgy and Bess*** for the price of $ 650.000 and 10 percent of the film's gross earnings. The owners of the opera rights had refused other much higher bids because they had a lot of confidence that Goldwyn would better 'preserve the integrity of the opera!' The negotiations over the film rights of the opera had taken more than twenty years since the try-out on stage in 1935 in Boston on September 30.

It played for the first time on stage in Europe in 1943 in Copenhagen, Denmark by the Danish Royal Opera Company. The creation of the opera was a painful work from composer George Gershwin and his brother Ira. George was already a famous musical song composer on Broadway at the age of 25. Among his most famous compositions, written when he was 21 years old, was the song 'Swanee' sung by famous 'talkie' star Al Jolson in his revue. In 1924, he was 26, he composed one of his other great classic works 'Rhapsody in Blue'. In that same year his older brother Ira joined him as a lyric writer for most of his songs. This collaboration lasted till George's death in 1937, only 38 years old. Once he read 'Porgy' in 1928, he wrote a letter to Dorothy and DuBose Heyward with the suggestion to transform their novel into a musical version. At that moment the DuBose Heywards were still occupied with the adaptation of their novel into a play and so it took more than seven years before they agreed. In June 1935 Gershwin started with composing the music for the musical opera. He went to Charleston in South Carolina for several months, to enter into the atmosphere, the traditions, the prayer meetings and the songs of the black people in the south. It took him nearly 16 months to finish the songs and to complete the orchestration for the opera. The official premiere on stage took place on 10 October 1935 in New York. A successful premiere performance which was concluded at the end with a thunderous applause of the first night audience. In 1958 Samuel Goldwyn started with preparations for the filming. The night before shooting would start in July 1958, fire broke out in the huge stage, destroying eight months of work on sets and costumes with several million dollars of damage. After three months of day and night work cameras could finally start and the picture was finished just before Christmas. The World Premiere of the Todd-AO 70mm film in New York was on June 25, 1959.

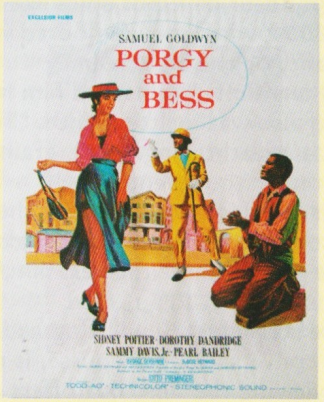
On 27 November 1994, John Michael Caffey from Marina del Rey wrote a very interesting and extensive letter to the Calendar section of the Los Angeles Times, about the studios' efforts to restore and release much-loved classic films till then unavailable for home video. 'Two of them – ***Porgy and Bess*** and ***Annie Get Your Gun*** – are held up in a legal limbo that would tax King Solomon.' And he continues his letter: 'Last year in an interview with The Times, the lawyer for the Gershwin estate bluntly stated that all effort was being brought to bear on finding and destroying any existing copies of Sam Goldwyn's production of ***Porgy and Bess***, directed by Otto Preminger and starring Sidney Poitier and Dorothy Dandridge. The reason given was the late Ira Gershwin's dislike of the film. He felt that his opera had been turned into a musical, a fair assessment that nonetheless disparages the sizable talent involved: Sammy Davis Jr, Pearl Bailey and the voice of Robert McFerrin.

In response to my fax to the Academy of Motion Picture Arts and Sciences, President Arthur Hiller was kind enough to investigate, and in his reply he assured me that a safety negative was secure in the Goldwyn vaults. While I was cheered to know this, I am still dismayed that future generations will be denied the opportunity to see this classic.

Another executive who was helpful in my quest, Dick May of Turner Entertainment, detailed the similar plight of ***Annie Get Your Gun***, which starred Betty Hutton and Howard Keel. Dick. May said the late Irving Berlin was disappointed in Hutton, having had his heart set on Judy Garland, who was fired from the production because of her instability. In addition, his heirs fear that the stereotypical representations of Native Americans might be found offensive. The result? An inventory of ready-to-market restored copies of 'Annie' sitting in a warehouse. I find the effortsof the Gershwin and Berlin heirs to deny audiences the chance to view these films an abomination to cinematic history and a violation of the rights of the other artists involved in these productions.'

Thus the important letter of Mr Caffey. This is indeed not the way to deal with 'our' classic film heritage. Porgy and Bess assured immortality to George Gershwin and millions of people throughout the world have seen it on stage or on the screen. In fact it is unacceptable that screenings of this masterpiece have ended now. Meanwhile the DVD of ***Annie Get Your Gun*** has returned into the shops but no sign of ***Porgy and Bess***!

Samuel Goldwyn 'Porgy and Bess', Gershwin's Masterpiece



As Good As It Gets An interview with Bill Bennett, ASC

If you spend a lot of time watching movies and television with a critical eye, you probably think you have a good idea of what a high-quality image looks like. Well, think again... because cinematographer Bill Bennett, ASC has just reset the bar!

Bennett, known affectionately by his peers as 'The Car Guy' for his extensive résumé of TV commercials featuring slickly-photographed automobiles, recently shot a demonstration film which has been titled ***As Good As It Gets***. The six-minute demo, captured in 65-millimeter(!), features breathtaking imagery of two young women trekking through the desert landscapes of Death Valley and the lush forests of the Sier_ra Nevada mountains. The film also features a drive through Los Angeles.

Originally shown at a film format seminar at UCLA in 2006, 'As Good As It Gets' was privately screened on April 11, 2007, at the American Cinematheque's Egyptian Theatre in Hollywood to a gathering of filmmakers, film-format enthusiasts and a journalist or two.

Among the attendees impressed by the demonstration was cinematographer M. David Mullen, ASC (***The Astronaut Farmer***, ***Akeelah And The Bee***). "The simple truth is that Bill Bennett's demo proves that oversampling works," Mullen said. "It also makes you realize that we still have the technology to return cinema to the grandeur of 1960s epics like ***Lawrence Of Arabia*** and ***2001***, when movies floored you with their technical quality on the big screen."

"This looked **terrific**!!!," remarked film historian Rick Mitchell, who also was in attendance. "The detail you could see was breathtaking. Little grain was visible, and I was sitting in the seventh row!"

So could this lead to a new feature shot in 65mm? "Maybe...if some contemporary filmmakers with **true vision** can be gotten to see this test film," says Mitchell.

Following the screening, Bennett agreed to do an interview. The conversation, of course, is no substitute for actually viewing the film, but offers some insight into how and why the demo was made.

Michael Coate, from script to DVD: How did you become involved with this project?

Bill Bennett, ASC: *I was having a meeting with Franz Krauz, CEO of Arnold & Richter, the parent company of Arriflex, at their offices in Munich, Germany, in the spring of '06. During that discussion, he asked me if I would shoot this demo.*

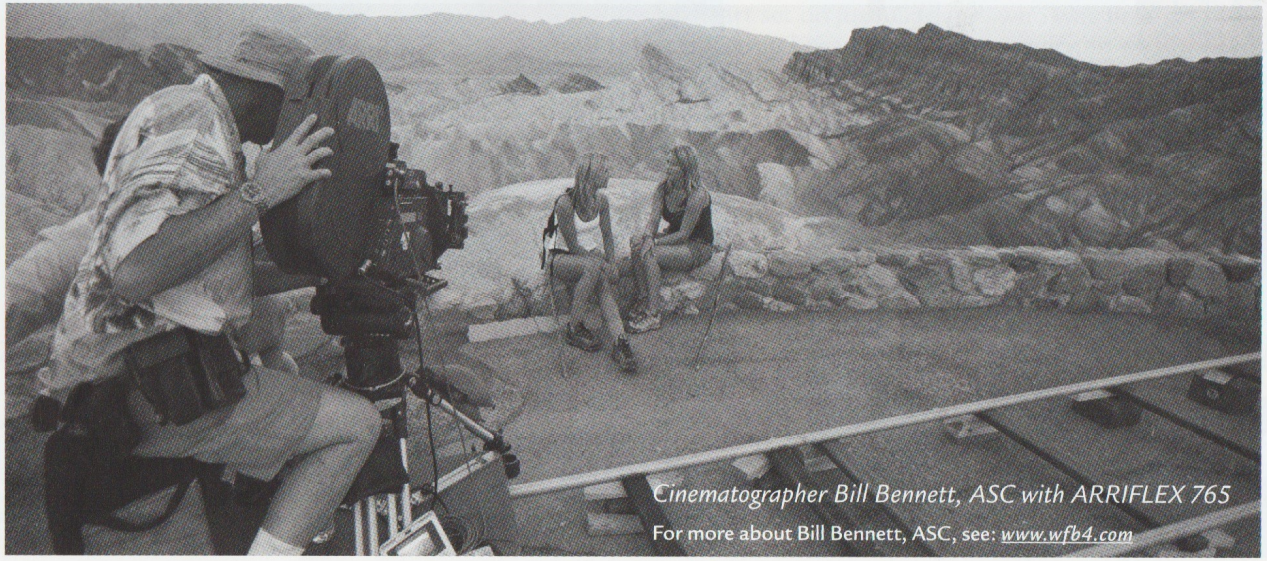
M: What is the objective of the demo?

B: *During my discussion with Franz, we were talking about what we felt was a continuous decline over the past 30 years of the quality of images seen in the typical cinema, along with the fact that new digital camera and projector manufacturers were claiming that the images from their products were truly excellent.*

Franz and I felt that we needed to shoot some material in the 65mm/5 perforation format, using the latest modern film stocks, to "reset the bar" as far as high image quality is concerned. It has been many years since audiences have been able to view 70mm images that were shot in the ultra high resolution 65mm format.

We also wanted to have a source of high quality images to blend into 4k DI [Digital Intermediate] workflow streams, to prove the following: Assuming that you are doing a DI for your movie, and you are shooting in 35mm, you gain a lot more detail in your wide establishing shots if you shoot those shots in 65mm, scan them at 8k or 6k, downsample them to 4k, and blend them into your DI with your 35mm dialogue and close-up shots. We proved that at the November screening at UCLA, where we showed the same scene, shot in both 65mm and 35mm. In wide shots, the 65mm contained much more detail, when compared to the same scene shot in 35mm. In the close-ups, there was not as much of a noticeable difference, proving that you don't need to shoot your entire movie in 65mm, just the wide shots, then blend them all together in your DI, to achieve a much better audience experience.

Recently, ***The New World*** *(photographed by 'Chivo' Emmanuel Lubezki, AMC, ASC),* ***We Fight To Be Free*** *(by Kees van Oostrum, ASC), and* ***The Prestige*** *(by Wally*



Cinematographer Bill Bennett, ASC with ARRIFLEX 765

For more about Bill Bennett, ASC, see: www.wfb4.com

Pfister, ASC), all used 65mm for some of their wide shots, and incorporated it into their 35mm close-up photography. Another objective of the project was to provide very high quality images in 8k for testing of digital projectors, DI workflow, compression algorithms, etc. To date, Sony, E-Film, Adobe, and Dolby Labs have been using the material for that purpose, and more are requesting access to the material.

M: How were the locations selected?
B: *I spent some time analyzing the wide shots in one of my favorite movies, **Lawrence of Arabia**, which was shot in 65mm/5 perforation. That movie was set in the desert where there was little atmospheric haze, allowing the camera to see for miles into the distance. I also noticed that director David Lean and cinematographer Freddie Young, BSC would often dolly side to side during their wide shots, while choosing locations and prop positions so that there were many layers to the shot leading off into the distance.*
I followed that lead, shooting in the [California] high desert locations around Lone Pine, the Alabama Hills and Death Valley, as well as at 10,000 feet up in the Sierras. Like Lean and Freddie, I would dolly left to right during the shot, while choosing locations with many layers of depth, extending for miles off into the distance.

M: How was this project funded?
B: *Arriflex in Germany was the primary sponsor, paying for production costs, as well as providing all the cameras and lenses. Arri Film and Digital in Munich did the scanning and the first DI, seen in November of '06 at UCLA. Kodak was a significant sponsor in providing all the film stock. And FotoKem was also a significant sponsor, providing processing of all the negative, telecine for dailies, and scanning at 8k for the upcoming DI they are finishing in their facility.*
E-Film and Deluxe Digital contributed by converting the DI done in Munich to the file projected on the Sony 4K projector at UCLA in November.
Many other companies contributed much to the production and finishing of the project. Sony provided the projector for the November screening. Server manufacturers provided the servers for that screening, etc.

M: What cameras were used on the shoot?
B: *The 65mm/5 perf camera was an Arriflex 765, using Zeiss Super PL mount lenses. The 35mm/4 perf camera was an Arriflex 435 Xtreme, using Zeiss UltraPrime spherical and Zeiss Arriscope Anamorphic lenses.*

M: What film stock(s) did you select?
B: *We primarily utilized Kodak 5201, 50D, with some use of 5205, 250D, and one shot at night using 5218, 500T.*

M: At what frame rate was the film shot and projected?
B: *Most of the demo was shot at 24 frames per second. The young woman on the rock with the cloth blowing overhead was shot at 60fps on all cameras. All the projection was at 24fps.*

M: What was the post-production workflow for this project?
B: *First we processed the negative at FotoKem in Burbank, then we did a telecine of all the material there as well. I did an offline edit on my Macintosh using Final Cut Pro. We did an assembly of the HD telecine master from that offline, to use as a reference for the final DI. Then, that DI was done at Arri Digital Film in Munich where they scanned everything, both the 65mm and the 35mm material at 6k, then downsampled to 4k for the DI. They did a film-out in two ways. First they created an internegative in the ArriLaser, which they printed to the 35mm release print stock. Then they did something never done before: they struck a 35mm release print directly in the ArriLaser, and projected that in the projector. It was startling to see how much resolution is lost in the contact printing of the internegative to the release print stock, as the 'direct print' was very sharp.*
The DI was projected using a 4K Sony projector, and the 35mm anamorphic prints were shown with a 35mm projector in the theatre.
The 70mm film print was contact printed directly from the camera original 65mm negative, and projected in 70mm in the theatre.
FotoKem is working on a new DI that contains more shots, where they are scanning all the 65mm material at 8k, instead of the previous 6k, with the 35mm material scanned at 6k. We hope to show that DI around the time of Cine Gear.

M: To whom has the demo been screened?
B: *There was the first screening at UCLA in November of '06, where we showed the material in 4k digital projection, 35mm anamorphic film projection, and 70mm film projection. The next screening was in England a month ago at a wide screen convention held annually [at the National Media Museum in Bradford], where they showed the 35mm and the 70mm prints. The latest screening was the one you saw at the Egyptian Theatre in Hollywood. In each case, we invited people in the industry who were interested in seeing this sort of comparison. We plan to show it again just prior to the upcoming Cine Gear Expo [June 21-24, 2007].*

M: In what way would the film industry and moviegoers benefit from seeing films made in 65/70mm?
B: *Vastly increased resolution and color depth on the screen. When we showed the 70mm print last November to the audience that had already seen the same shots in 4k digital projection and 35mm anamorphic film projection, they were blown away by the quality of the 70mm print. In fact, the audience asked to see the 70mm print a second time. I invited members of the audience who were sitting in the back to come sit on the floor in front of the first row to better see the image quality. Vilmos Zsigmond, ASC [**Close Encounters Of The Third Kind**, **The Deer Hunter**, **The Black Dahlia**] was sitting in the first row. After the screening, he came up to me and thanked me for shooting and showing the 70mm print, and he said that he had forgotten just how good it can look. That to me was the ultimate payoff for the whole thing, that someone as highly gifted as Mr. Zsigmond would recognize why we did it and totally appreciated it.*

This interview was originally published in May 2007 on the website: ***www.fromscripttodvd.com/bill_bennett_interview.htm***). It is reprinted here with permission.

The Essence of Cinema

Some years ago a group of projectionists invited me to Sweden for a 70mm screening of '***Paint Your Wagon***'. It was the most unusual show I have ever seen, complete with 70mm projectors and rewind table which had been set up in a living room pointing directly out into the garden where a curved screen had been installed on the lawn, between two trees. It struck me just how much they love cinema and film. They could have done it the easy way with a VHS tape and a TV, but that was not good enough. This group, depressed by Hecta-plexes and the closing of cinemas, simply set up their own cinema, as they believed cinema should be.

'They shared everything: gold, fun and even their wife!'

Reclaim the Cinemas!

'Reclaim the Cinema', as they called it and I realized how great this was. People being together, having a good time, watching a motion picture, sharing something exceptional. To see enthusiasm for the movies like this - an old film coming alive again for an enthusiastic crowd was spectacular. I think the Swedes captured the 'Essence of Cinema'. Difficult to explain - you have to see this yourself to understand.

But what is this '70mm' with people rebuilding their living room to see it? Well, 70mm is the superior cinema experience widely used in the 1960s for big epic movies like '***Lawrence of Arabia***' and '***2001, A Space Odyssey***'. Films which created a lasting impact on people, and for some, this impression has stayed with them since their childhood. 70mm Is a better product, and considered the ultimate cinema experience.
During the 1950s and 60s, nearly a 100 films were produced in 70mm. Still, those titles have acquired such an aura of mystique, like the royalty of cinema, that fans are flying in from all around the world to see them somewhere on a 70mm festival.

'Essence of Cinema', say what?

Can the 'Essence of Cinema' be found elsewhere? Indeed it can, in many places - it is really up to yourself. I have been fortunate to experience it several places myself. Mr. Herbert Born, owner of the Schauburg Theatre in Karlsruhe, invited me to come to Germany for his first Todd-AO Festival back in October 2005. Being familiar with 70mm festivals, I was excited to see how he would organize his 70mm festival. Mr Born has worked for 30 years in German movie industry and has received several awards for his work in Karlsruhe. He has a 'good nose' and understanding of what the audience likes and how they prefer the 'Essence of Cinema' at his Schauburg Theatre.
The Historic Schauburg cinema dates back to 1906 when it was built as a single screen theatre. Nowadays it has 3 screens under the same roof: 'Schauburg', 'Cinema' (on the former balcony) and the 'Bambi' with just 61 seats. All three screens have 2K digital projection and naturally all sorts of sound formats. The Schauburg is a leading and independent cinema in Germany, and the 70mm Todd-AO festival is a supplement to a wide range of activities already taking place in the cinema.
I felt I was in for something special, and I was not disappointed. I looked forward to 3 days of quality projection and got everything I could wish for. The staff of the Schauburg has an open and relaxed attitude and at the same time show incredible attention to detail in projection and care of the audience. The festival turned out to be a wonderful experience, with posters, German beer, ultra sharp pictures on a curved screen, 6-track magnetic sound, a fabulous cinema, very nice feeling of being welcome.

Community and understanding your audience

The Todd-AO Festival attracts a large and diverse audience, mainly from Germany, but the festival has grown into an annual international event with guests from France, Holland, Czech Republic, Slovak Republic, Canada, Denmark, Sweden, Austria, Switzerland, Spain, Portugal, United Kingdom and USA. The core audience is very dedicated to 70mm and some are signing in months in advance before making their pilgrimage to Karlsruhe. They possess a huge knowledge of film and formats and can debate for hours and hours about how films should be presented, and not least how they USED to be presented in the golden days of 70mm presentation. Some have even gone the extra 'mile' and promote 70mm, to keep the flame alive a little longer. That includes Johan Wolthuis, from The Netherlands, who is promoting 70mm through his International 70mm Publishers and of

course Brian Guckian, from Ireland, of the 65/70mm Workshop. Another friend of the Schauburg Theatre is Wolfram Hannemann from Germany,who is always the right man on the spot with very good introductions to the films.

Catering - no, we cannot have people starving. One of the problems watching films all day long during a weekend of 70mm films is the lack of food. You could leave the cinema and miss a film. But, if you travel to Karlsruhe to see special classic films, that is not really the best solution - to miss a film. Herbert Born has solved the problem. He serves a full breakfast Saturday and Sunday morning in the Schauburg foyer at 9 o'clock and in the afternoon he serves food, snacks, coffee and tea between the films. Of course the audience can buy beers and chocolate, but the food is included with the festival pass. I think the audience appreciates it, because it creates a relaxed atmosphere, as they don't have to leave the cinema to get lunch or dinner. They can stay, talk and enjoy food, beverages and film all in a very social ambiance.

The Presentations and Showmanship

It does puzzle me a bit why those 70mm films are still so popular that people, are traveling in from near and far to see them. Most of them were not very good movies. Granted, two dozen of them were very good movies and still hold up today, because they were very well produced, had good actors and directors. But some were really bad. The sole common denominator was the presentation format:original 70mm with 6-track stereo. So, what is the attraction? It's a different experience to watch these old films, and something unlike anything you can see anywhere else in cinemas today. They have wonderful analogue magnetic sound which is very pleasing to the ear. It's not particularly loud but it sounds good and some will say it sounds better than modern digital film sound. Some films are old and faded, but they are still unbelievably sharp and have eye popping production quality - they are big epic movies. And that makes all the difference in the world. To see 70mm on the curved screen is so extraordinary, and different, that it has to be seen to be understood. There is no 'digital' trickery involved with classic 70mm. It is still done with analogue projector technology developed in the 1950s, only the lenses are brand new. Getting the best includes presenting something not seen in cinemas for 30-40 years: Ultra Panavision 70, an anamorphic projection technology applied to only 9 films. The Schauburg can show it, and everything is always in perfect focus thanks to the two house projectionists: Markus Vetter and Vincent Kock.

In the Schauburg, 70mm is shown on a curved screen, which adds to the excitement, because that is how it was done when the films originally premiered. It is 17 meters wide, and the curvature of about 3 meters. That adds a sense of depth, when the actors move across the screen. Enhancing a good performance inside the cinema is a lobby and facade decorated with movie posters and a big sign. It is a lost art form to 'make up' the cinema. Schauburg's decoration is second to none, with vintage movie posters and stills. The audience is also given a free 80 page weekend souvenir program with specially written articles and movie information.

The Importance of a Festival

Herbert Born and his staff have also captured the '***Essence of Cinema***' for me. Bringing people together, having a good time, watching the screen, sharing something exceptional. The Schauburg is the 'Disneyland of 70mm' - it cannot be seen anywhere else like this. 70mm is good in a cinema like Schauburg with a design and proportions supporting 70mm films. To me, the Schauburg is a chance to see classic films again in the best environment - and it's really worth the effort to go on a long weekend to see movies. This is really the best place to see 70mm, and not only for it's technical virtues. Let's hope the Todd-AO Festival will continue for many years.

Schauburg Theatre, Karlsruhe

Hello Dolly (pictures by Thomas Hauerslev, www.in70mm.com)

European 70mm History

by Jan Hein Bal

Besides the USA three other countries constructed cameras for 70mm films, the USSR (Soviet-Union), the German Democratic Republic (East Germany) and the German Federal republic (West Germany). Although English language 70mm production was more widely known, continental Europe produced much more 70mm films. The Soviet-Union had the highest production with three quarters of the world output and was the most successful.

Western Europe

In West Germany two cameras were constructed for 65mm negative. The Norwegian engineer Jan Jacobsen designed the light field reflex camera MCS-70 for the West German company Modern Cinema Systems, so European countries could shoot their own 70mm films. It was first used for the West German long travelogue ***Flying Clipper*** (Mediterranean Holiday, 1962). It was restored for the 2009 Berlinale festival '***70mm retrospective***' by Fotokem in Los Angeles.

Later also a blimped studio version was build. About ten European MCS-70 feature films (called ***MCS Superpanorama-70***) were produced in the sixties, also in France, Spain and Hungary and often as international co-productions. Feature films included the French costume adventure ***La Tulipe Noire*** (Black Tulip, 1964, Christian-Jaque) and the comedy ***Playtime*** (1967, Tati) which was partly shot in MCS-70. Shorts included John Fernhout (Ferno)'s remarkable documentaries ***Fortress of Peace*** (1964) for the Swiss army, and ***Sky over Holland*** (1967) for the Canadian World Fair. Both were nominated for Academy Awards. The last MCS-70 film was the Norwegian animated short ***Tanakh Bibelen Al-Quran*** (Tanakh The Bible Al-Quran, 2007, Vevle).

The lightweight 65mm camera ARRI-765 was constructed in 1989 for West German company Arnold & Richter. Its usage for flashbacks in ***Little Buddha*** (1993, Bertolucci) is best known. But only shorts films were entirely shot with this camera, like the German comedy ***Tour Eiffel*** (1994, Helmer). See also: Christian Appelt, Dream journeys, the MCS-70 process and European cinema of the 1960s (*www.in70mm.com*).

East Germany

The East German state film studio DEFA in Potsdam-Babelsberg developed in 1964 the DEFA-70 Reflex, a 70mm studio camera with an internal magazine and blimp. Instead of western 65mm cameras here 70mm negative was used mostly with ***Orwocolor***. The only camera was first used for the short film ***DEFA 70*** (1967) but also Soviet 70mm cameras were used in East Germany. Eight feature length films, partly eastern European co-productions. The first was the

comedy ***Hauptmann Florian von der Muehle*** (Captain Florian Of The Mill, 1968). Also two SF-films were produced and an ambitious documentary ***Du Bist Min*** (You Are Mine, 1969, Thorndike etc.), a troubled production with much political interference and cutting. The most successful feature film was ***Goya*** (1971, Wolf), an ambitious biography of the painter. The last film was the musical ***Orpheus in der Unterwelt*** (Orpheus In The Underworld, 1974, Bonnet).

Ultimately 70mm appeared too expensive and not successful. East German party leader Walter Ulbricht considered it useful for ideological purposes but after he was replaced by Erich Honecker in 1971 the 70mm film production was declared a waste of money and became banned.

In 1961 a universal 35/70mm projector was constructed, the Pyrcon UP-700 by the company Zeiss Ikon in Dresden. There were first-run 70mm cinemas in Leipzig (Schauburg) and East Berlin (Kosmos and Kino International) which also screened Soviet films in 70mm. The 2009 Berlinale festival '***70mm retrospective***' was partly in former East Berlin's most beautiful 70mm cinema, the ***Kino International*** from 1963 whose only auditorium is still intact.

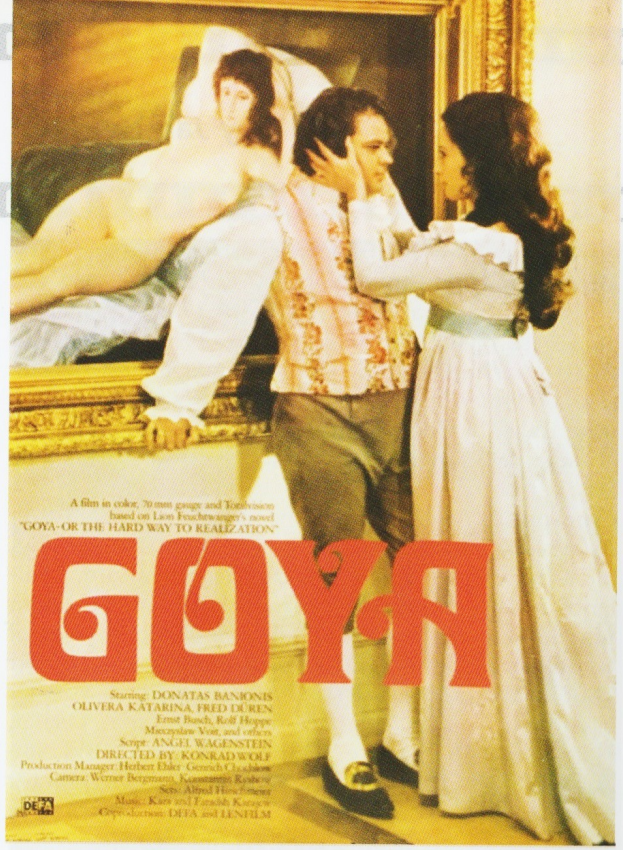
Soviet-Union

Several Soviet cameras were built for 70mm negative including the studio camera Rossia 1-SWS (1-CWC in Cyrillic) for live sound recording, the studio and location camera Kinap 70-SK, the high-speed Kinap 70-KSK (with a double set of exterior magazines), and a Kinap hand-held camera. As colour raw stock Agfa and Orwocolor was used. Prints were credited as ***Sovcolor***.

The Soviet-Union had the highest 70mm production in the world and also the most cinemas, with billions of visitors each year. After Stalin's death in 1953 the film industry became more liberal and increased gradually from about 15 films a year to about 125 films by 1968. In 1974 there were 156.000 projection units, including 24.000 continuously operating theatres, though mostly 16mm and mobile units.

The boom period was between 1960 to 1978. The number of cinemas which could also screen 70mm increased from 87 in 1965, to 620 in 1972 and almost 1000 in 1974, including the Moscow Oktyabr and Rossiya theatres (with auditoria for about 2500 visitors) and one in the Kremlin. A popular Soviet 35/70mm projector was the Odessa KPK-30.

The 2009 Berlinale publication '***70mm, bigger than life***' includes the most accurate European filmography to date which lists about 175 Soviet films produced in

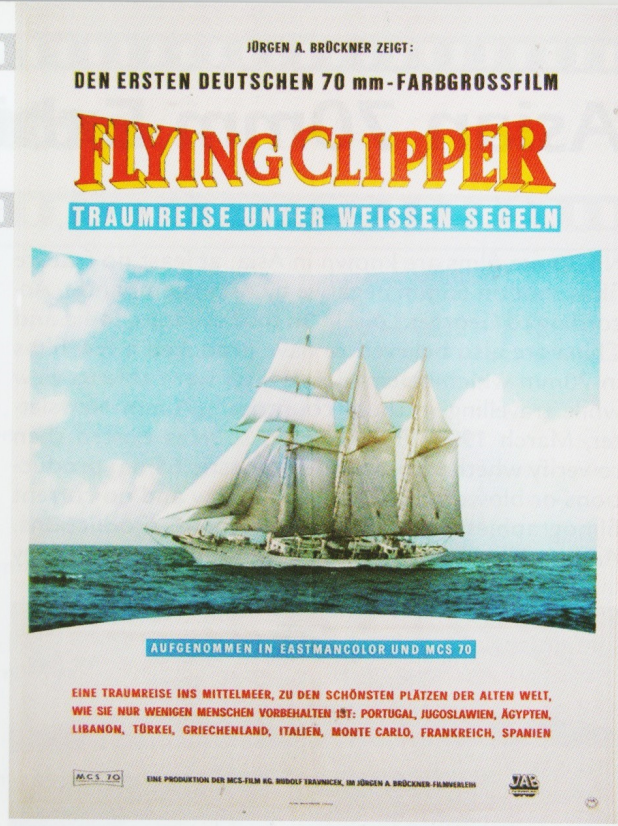


70mm, including ballet films and documentaries like the impressive splitscreen historical compilation ***Nash Marsh*** (Our March, 1970) but excluding further films mentioned by imdb.com, like the fantasy adventure ***Zemlya Sannikova*** (Sannikov Land, 1973) and others. Soviet films were often released in several parts (in western countries mostly abridged) so there were well over 200 Soviet 70mm releases, excluding blow-up prints from 35mm to 70mm. For the enormous demands also many blow-up prints were needed but both Soviet 70mm productions and blow-up prints were credited as Sovscope-70, which makes research difficult. Unlike in the west, the Soviet 70mm production continued for many decades each year till 1989.

The first 70mm production was the epic drama ***Poema o More*** (Poem Of The Sea, 1958, Solntseva), followed by the war story ***Povest Plamennykh Let*** (Story Of Flaming Years, 1961, Solntseva) and one of the few films with western distribution. Only the Soviet-Union produced also incidental 70mm black-and-white films like the revolution drama ***Optimisticheskaya Tragedia*** (Optimistic Tragedy, 1963, Samsonov). Most films were produced by Mosfilm studio and Gorki studio in Moscow, Dovzhenko studio in Kiev and Lenfilm in Leningrad and some were international co-productions with DEFA and others. Some have impressive exteriors like the opera ***Knyaz Igor*** (Prince Igor, 1969, Tikhomirov) shot entirely on location. Other well known titles are the literary adaptations ***Anna Karenina*** (1967, Zarkhi) and ***Bratya Karamazovy*** (Brothers Karamazov, 1968, Pyriev), the multi-part war epic ***Osvobozhdenie*** (Liberation, 1969, Ozerov), the biography ***Tchaikovsky*** (1969, Talankin) and the poetic drama ***Dersu Uzala*** (1975, Kurosawa) which received an Academy Award just like the most famous film ***Voina i Mir*** (War And Peace, 1967, Bondarchuk). This film was made in four parts and is the most ambitious, expensive and successful 70mm Soviet film. The dance, the fire and the battle scenes have many impressive tracking shots and giant crane shots which can be seen executed (with several types of Kinap cameras including many hand-held cameras) on the dvd about the making of ***Voina i Mir***. Soviet 70mm films were also shown elsewhere in eastern Europe but hardly in the west as they were more suited for their home market. Local contents and ideological nature made them often rather difficult for western audiences. In London only four Soviet films were shown on 70mm, in the Netherlands only five including ballet films without dialogue like ***Lebedine Ozero*** (Swan Lake, 1969). But they were hardly successful and also few were shown as 35mm reduction prints. See also: 70mm motion picture cameras used in the Soviet-Union (American Cinematographer, August 1974).

Fading

Unlike western colour stock like Eastmancolor which extremely fades towards magenta after decades, the eastern European ***Orwocolor*** films hardly appear to



fade so far. Soviet and East German 70mm vintage prints after half a century still can have impressive colours as could be seen at the 2009 Berlinale '***70mm retrospective***', like ***Goya*** or the surprising experimental Soviet drama ***Dnevnye Zvyozdy*** (Stars Of The Day, 1968, Talankin) with beautiful camerawork by female cinematographer Margarita Pilikhina. It was for a long time suppressed in the Soviet-Union and hardly seen anywhere. The Russian Gosfilm archive however has no funds for 70mm film restoration and the prints are in fragile condition. The Potsdam Filmmuseum collection includes the DEFA-70 Reflex camera and several Soviet 70mm cameras including Kinap hand-held cameras.

The pictures of War and Peace and Goya were gratefully provided by the Amsterdam Filmmuseum, now part of the Eye Film Intituut The Netherlands.

Asian 70mm Exhibition

by Jan Hein Bal

No 70mm films are known in Asia, at least no feature films shot on 65mm negative by Asian companies. According to Georges Loisel: "In the Seventies, India and China are also believed to have produced a few films in 70mm which cinema journalists were able to view while travelling in these countries" (70mm Newsletter, March 1993). However no sources existed then to verify whether these were domestic 65mm productions or blowups. These do exist now and no current filmographies mention Asian 65mm productions. And authors from countries like China, India, Turkey

Photo: Marijke de Vos

acknowledged that no domestic 65mm productions exist (see reports on www.in70mm.com). Of course those travellers did see domestic 70mm prints which were announced as 70mm films just as happened sometimes with blowups in the west.

In Turkey many films from USA were released on 70mm but no domestic blowups. In other Asian countries however also domestic films were blown up, especially in India.

Japan already released foreign 70mm films since ***Oklahoma!*** in 1956 and blowups included ***You Only Live Twice*** in 1967 (with its Japanese James Bond locations). Japanese company Daiei presented two historical epics in Super Technirama, ***Shaka*** (Buddha, 1961, by Kenji Misumi) the first Japanese film on 70mm, and ***Shin No Shikotei*** (The Great Wall, 1962, by Shigeo Tanaka). Domestic blowups include the war story ***Gekido no Showashi Gunbatsu*** (The Militarists, 1970, by Hiromichi Horikawa), the epic ***Ran*** (1985, by Akira Kurosawa) and animation ***Akira*** (1988, by Katsuhiro Otomo). In Indonesia the adventure film ***Pendekar Bambu Kuning*** (Warrior with the Cane Sword, 1972, by Pitradjaja Burnama) was announced as 'the first Indonesian picture filmed in 70mm and full stereophonic sound', but was a blowup. Until 1997 China had 12 conventional 70mm blowups (besides blowups to larger image formats) but titles are unknown.

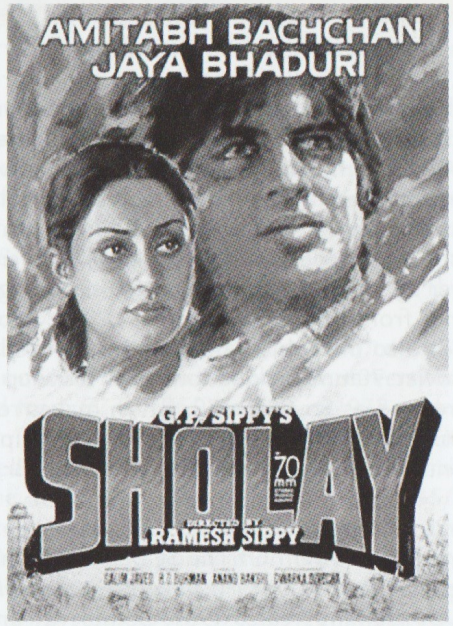
India

In addition to 70mm prints of foreign films like ***The Sound of Music*** India had the most domestic blowups in Asia. About two dozen titles are known, mainly action films from the eighties. The family film ***Duniya Ki Sair*** (Around the World, 1967, by Pacchi), was announced as 'India's first film in 70mm and stereophonic sound'. Three films were directed by Ramesh Sippy including ***Sholay*** (Flames, 1975), a 'seven samurai' adaptation in typical Bollywood style with Hindi superstar Amitabh Bachchan. This incredible megahit ran over five years in Mumbai's 70mm Minerva cinema. The disaster movie ***The Burning Train*** (1980, by Ravi Chopra) was a sort of ***Cassandra Crossing*** remake. The drama ***Sohni Mahiwal*** (Legend of Love, 1984, by Latif Faiziyev and Umesh Mehra) was coproduced by the Soviet Union where the films from India became extremely popular during the Nikita Khrushchev era.

In the eighties over 150 films each year were produced in Hindi, just as over 150 each in the two southern India languages Tamil and Telugu, but most blowups were Hindi films and hardly in other languages. The adventure ***Maaveran*** (1986, by Rajasekar) was the only Tamil language blowup (with title sequence in Saul Bass style) and ***Simhasanam*** (1986, by Krishna Ghattamaneni) the only Telugu language blowup. The last known blowup was ***Maine Pyar Kiya*** (1989, When Love Calls, by Sooraj Barjatya). See also: 70mm film in India, by Ramachandra Babu.

Cinemas

Asia had at least 70mm cinemas in China, Hong Kong, India, Indonesia, Japan, Philippines, Singapore, Thailand, Turkey, and Vietnam. The Tokyo Shinjuku Koma Stadium cinema opened 1956 with a 70mm print of ***Oklahoma!*** on Philips DP 70 projectors, and with over 2800 seats as one of Asia's largest cinemas. Further cinemas with DP 70's included Hiroshima, Osaka, Hong Kong, Singapore, Manila, Bangkok, and Saigon. In 1997 China counted 36 cinemas equipped for



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conventional 70mm (besides larger image cinemas). Though all countless Soviet 70mm films were produced in Soviet Europe, part of their almost thousand 70mm cinemas in 1974 were situated in Soviet Asia as well. India still has many 70mm cinemas. Sheila cinema in Delhi calls itself 'India's first 70mm cinema' since 1961 with India's largest screen. The most famous cinema of Asia is Raj Mandir in Jaipur, India. This single screen cinema from 1976 has over 1200 seats, a curved screen and despite only Hindi films it even attracts foreign visitors for its impressive architecture. During a visit in 2009 it remained unconfirmed however if 70mm projection is still possible.

* *A large poster 'Original 70mm Films' goes as a supplement with this publication!*

What does 70mm Mean Today?

For most moviegoers of the Sixties, 70mm meant the ultimate theatrical presentation experience, the best alternate to the 21-25 inch television set in the home. Given the theatrical industry's current desperation in dealing with recent audience declines, and given the fact that camera and projection equipment for the format are fairly readily available, many with fond memories of their past 70mm moviegoing experiences have wondered why it is not being considered for attracting new audiences.

Unfortunately, what's being overlooked is that the term '***70mm***' doesn't have the same meaning today that it had 40 years ago. Originally it referred to the presentation on large wide screens of 70mm prints photographed on *65mm* negative stock, one of the highest resolution formats ever used for motion pictures. (And henceforth in this article, 65mm will be used when *specifically referring to this mode.*) Over the last thirty years it has come to mean anything shown using a 70mm print, for other methods of achieving such prints soon evolved, ultimately leading to a diminution of their effectiveness, especially when they were shown in small auditoriums on small screens. Though new 70mm prints of 65mm films from the Fifties and Sixties have been struck and shown over the last 25 years, most current programs of '70mm films' consist primarily or exclusively of blow-ups from the Eighties, which are really not reflective of the original idea behind the format. A two week '70mm Festival' thrown by a Los Angeles theater in 2008 for celebration of its 70th anniversary had only *one* film actually shot in 65mm!

Initially 65mm was used exclusively for films that were roadshown in their first run engagements. That is, they were shown in one movie palace in one major city for at least a month or more, two showings a day at higher ticket prices and often with reserved seats. Not all the subsequent 65mm productions were hits, but the ones that were turned out to be monsters, playing over a year in many cities and interesting many producers and studios in getting on the roadshow bandwagon. To increase the number of such films, in 1959 Technicolor began making 70mm prints of films photographed in its 35mm Technirama format: 35mm film run through the camera horizontally photographing an image over eight perforations in width with a 1.5x anamorphic squeeze. The original idea was to make better quality standard 35mm anamorphic prints, but the frame size was close enough to that of 65mm that 70mm prints of equal quality resulted (Super Technirama 70). Then, in 1963, using an optical printer lens designed by Panavision, they began making 70mm prints from 35mm anamorphic negatives with results that were considered comparable to original 65mm or Technirama photography, and this led to a further increase in titles shown in 70mm, especially in Europe. In 1967 MGM Laboratories made the first blowup from 35mm spherical photography on ***The Dirty Dozen***. Here the graininess and loss of sharpness was quite obvious and initially only a handful of such films got this treatment, in many instances musicals, blown up more for their stereophonic sound tracks than their images, which would lead to the ultimate tragic fate to date of 70mm.

The earliest attempts to bring stereophonic sound to film involved cumbersome systems that interlocked the playback machines and the projectors. Engineers from 20th Century-Fox thought they'd solved this problem when they developed a method of applying 4 iron oxide stripes to a 35mm print. However, many theater owners, especially of smaller houses, refused to spend the money for the extra speakers and amplifiers involved, and even the big movie palaces did not properly maintain their systems, which quickly diminished its popularity and use. By the mid-Sixties, only a few really big 35mm releases were being released with stereo prints, mostly musicals. In the mid-Seventies Ray Dolby developed a method of encoding four stereo channels into two channels from which an

optical track that could be used on all 35mm projectors could be made which would theoretically reproduce the original four channels when played through a special decoder. In initial practice, it did not work out this way as the tracks not only lacked the dynamic range monaural optical tracks were capable of at the time, but also could not maintain the discrete channel separation possible with magnetic sound. And the 70mm magnetic prints of ***Star Wars-Episode IV: A New Hope*** and ***Close Encounters of the Third Kind*** (both 1977) made better use not only of stereo sound and dynamic range, but also deep auditorium shaking low end, than any film made previously, of which the 35mm optical system was incapable. Young audiences in particular sought out 70mm screenings of these films and this led over the next fifteen years to an increasing number of both anamorphic and spherical films being blown up to 70mm not for superior image quality, but for *sound!* The introduction in 1993 of digital sound processes which could more closely replicate the 4 and 6 track magnetic sound experience soon supplanted that. As a producer once told me: "Now that we have digital sound, we don't need 70mm."

During this period, there were four attempts at reviving 65mm photography, which were not commercially successful for various reasons. Because the live action effects elements for ***Tron*** (1982) were shot on 65mm negative to make their transference to animation cels easier, it was decided to also shoot the approximately 20 minutes of live action footage in 65mm as well. But ***Tron*** was ahead of its time as a film, becoming a cult item in the Nineties when audiences, especially younger ones, became more computer savvy.

In 1989 Robert A. Harris and James C. Katz did a restoration of David Lean's ***Lawrence of Arabia*** (1962), considered by many to be the best example to date of 65mm photography, and its success, especially in its 70mm engagements, inspired renewed interest in shooting in 65mm among some then top directors who had grown up during the roadshow era, but only two projects and a hybrid came to fruition. Ron Howard's ***Far and Away*** (1992) was an attempt at a Sixties style period epic which wasn't bad, but it was material that had become commonplace on tv with 'Masterpiece Theater' and mini-series and didn't really attract contemporary audiences though it did do better in its 70mm engagements..

Legendary cinematographer Vittorio Storaro suggested to director Bernardo Bertolucci that the recreation of scenes from the life of Siddhartha in his ***Little Buddha*** (1994) be filmed in 65mm to distinguish them from scenes set in the contemporary United States, which would be filmed in 35mm anamorphic. This proved to be quite successful, but the film itself was more of the arthouse type and few of those theaters were equipped for 70mm projection. Strangely, the film was shown at Los Angeles' Cinerama Dome in 35mm anamorphic!

The biggest mistake was Kenneth Branagh's ***Hamlet*** (1996). The play alone would seem to be a strange subject for a revival of 65mm, though it was in line with the serious historical epics with which 70mm presentation was associated in the early Sixties. However, rather than give the film a big epic feel, Branagh and his cinematographer Alex Thomson chose to shoot it in the long lens tight close up style that was becoming increasingly commonplace at the time. In other words, it looked just a little sharper than the average Super 35 release and not much more spectacular than what could be seen on the increasingly larger tv screens of the time! And more annoyingly, Branagh and Thomson later made better use of wide screen in their 35mm anamorphic shot ***Love's Labors Lost*** (2000)! (The documentary ***Baraka*** (1991) and its currently being shot sequel ***Samsara*** are really not germane to this particular discussion as their appeal is to a specialized audience.)

Though it seems unlikely at the time of this writing, there is an outside possibility that a director with clout or a financial source who either remembers the Sixties roadshows or is impressed by recently restored 70mm prints of older films will seriously consider doing a dramatic film in 65mm and if it is successful, this is likely to cue a selective revival of the format. But that success will be dependent on not making the mistakes of the last thirty years in both technique and content. It needs to be made clear that these new 70mm presentations are *not* for sound (unless they also include something in that area beyond what's standard today) but for *images that are superior to anything available on tv and in regular theaters*, with more to see on a really big wide screen than excessive tight long lens close-ups, even though this is the antithesis of the preferred style of so many of today's video oriented directors. The subject matter has to be not only something that plays off this, but will also attract today's main regular moviegoing audience, which is, like it or not, younger people. There should probably be a minimum of CGI because seeing *real visual spectacle* should be the selling point, plus the cost of doing it at a resolution that will match well with the original photography would potentially be prohibitively expensive, and comments from the general public that have appeared in various media recently suggest audiences appear to be getting tired of CGI unless it is really necessary or germane to the material as with, as of this writing, ***2012*** and ***Avatar***.

65mm today would be used for what are called 'tentpole' films and shouldn't add that much to the budgets of such films. Distribution costs would be a bit higher but probably not as many as 100 prints would be used internationally, at least on the first such film, so it would be a worthwhile gamble with the right project and production team.

Here's hoping...

Acknowledgements

Although everything has been done to prevent errors, there will be always somebody who discovers something that looks like a mistake! And may be it is, but we spend lots of time for research and corrections in this very complicated project. It was a real dissappointment that a lot of companies like Kodak, Arriflex, Panavision and Kinoton did not want to support us despite many requests. I am deeply grateful to everyone who assisted me in putting this publication together. It is absolutely impossible to make a publication like this without the help of so many devoted friends. their names are mentioned here below.

* * *

Jan-Hein Bal (1949) He is the author of 'Amsterdam 70mm cinema history' *www.70mm.nl* and now investigates the Soviet 70mm history. He is part-time 35mm projectionist in an independent cinema in his home town Alkmaar. His main profession is stills-librarian of the Filmmuseum in Amsterdam, now part of the Eye Film Instituut Nederland. In 1991 the museum received two hardly used DP70 projectors from the Philips Congress Centre in Eindhoven, which are now daily used for 35mm projection and incidentally for 70mm screenings. The film collection of the museum counts about 25 different 70mm vintage prints, including a Samuel Bronston 70mm collection. Their 70mm widescreen weekends will be continued after their long awaited removal to a new futuristic building in Amsterdam, foreseen for 2012. They recently acquired a new restored 70mm print of ***West Side Story.*** Contact: *janheinbal@eyefilm.nl*

Michael Coate is an entertainment industry journalist. He was the Research Editor for Widescreen Review Magazine from 1997 to 2004, and has written extensively about large-format film exhibition . He lives in Los Angeles with wife and daughter.

Brian Guckian and **Mike Taylor** have worked in cinema projection and **Ramon Lamarca Marques** has written extensively on the 70mm Format. They established the 65/70mm Workshop in 2006 in the UK.

Thomas Hauerslev, MBKS, a former projectionist and now working as a technical assistant with the EU. Spends a lot of spare time editing not-for-profit « in70mm.com », a dedicated web site about his love for large format films. Has interviewed many filmpioneers and published numerous articles for Cinema Technology. He feels very fortunate to have worked with the finest people of the industry, organizing 70mm & Cinerama screenings in Czech Republic, Denmark, Germany and the United Kingdom.

Terry Ladlow, a retired head master, was an indispensable proof reader for this publication! Since he retired, he plays the organ including famous existing cinema organs in England to accompany silent films (including at the National Media Museum in Bradford on their piano!). He composes his own music for silent classics and has appeared at several silent film festivals. He has also video recorded over a hundred cinemas in the UK, some of which is found in the BFI Library in London. So much for a retired life. And there was even time to write a piece for this book!

Bob Lindner is a graphic designer, with his own studio, living in Arnhem. He did the fantastic design for this publication and for the great classic 70mm poster (*www.bob-lindner.nl*). He also designs board games.

Rick Mitchell is a well-known film historian and writer in Los Angeles. He did also some proofreading for this publication.

Andrew Oran is the Vice President Sales and Operations, Large Format for FotoKem in Burbank California, a full service motion picture, television and commercial post production facility. Andrew's specialty is 65mm film, having worked on over 200 IMAX and 65mm special venue films over the past 15+ years, as well as several noteworthy 65mm restorations, including ***My Fair Lady*** in 1994 (photo-chemical) and ***Sound of Music*** in 2010 (4K digital).

Paul Rayton is the well-known chief projectionist of Hollywood's famous Egyptian Theatre of the American Cinematheque, on Hollywood Boulevard in Los Angeles.

Nigel Wolland MBE, FBKS entered the industry in 1955 with ABC Cinemas, joining Rank Theatres in 1960. He retired in 2006 after 25 years as Chief Engineer at the Odeon Cinema Leicester Square in London. In 2007 he was awarded an MBE from her Majesty the Queen for 'Services to the Film Industry'. He is a member of the Cinema Technology Committee and Vice Chairman of the Projected Picture Trust. (MBE = Member of the Order of the British Empire).

Johan Wolthuis was founder and publisher of the '70mm Newsletter' from December 1988 till December 1995. Several years he wrote reports for Cinema Technology in London. In 1996 he founded 'International 70mm Publishers' based in The Netherlands, in cooperation with Paul Rayton from Los Angeles and Wouter de Voogd from Amsterdam. Johan met Paul Rayton in about 1994 because of their common interest in 70mm filming and projection.
This contact resulted, among other things, in two publications: '*70MM PROMOTION: Enhancing the Movie going Experience through Superior 70mm Presentation*' in 1996 and: '*Film Presentation for the 21th Century: 70mm Super Definition Cinema*', which was published in 1999. Where there is hope, there is life: 70mm come back!

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International 70mm Publishers · Katwoudehof 36 · 6843 BX Arnhem · The Netherlands

Original 70mm & Cinerama Films

TODD-AO 70MM
1955 Oklahoma!
1956 Around the World in 80 Days
1956 The Miracle of Todd-AO (short)
1958 The March of Todd-AO (short)
1958 South Pacific
1959 Porgy and Bess
1960 The Alamo
1960 Can-Can
1963 Cleopatra
1965 The Sound of Music
1965 The Agony and the Ecstasy
1965 Those Magnificent Men in Their Flying Machines
1965 Man In The 5th Dimension (short)
1967 Doctor Dolittle
1969 Star!
1970 Hello Dolly
1970 Airport
1971 The Last Valley
1989 Cinespace 70 (short)
1993 Baraka

SUPER PANAVISION 70
1959 The Big Fisherman
1960 Exodus
1961 West Side Story
1962 Lawrence of Arabia
1964 My Fair Lady
1964 Cheyenne Autumn
1964 Lord Jim
1966 Grand Prix
1968 Chitty Chitty Bang Bang
1968 2001, A Space Odyssey
1968 Ice Station Zebra
1969 MacKenna's Gold
1969 Krakatoa, East of Java
1970 Song of Norway
1970 Ryan's Daughter
1982 Tron
1983 Brainstorm
1991 A Year Along the Abandoned Road (short)

PANAVISION SUPER 70
1992 Far and Away
1996 Hamlet
2010 Samsara

MGM CAMERA 65
1957 Raintree County
1959 Ben-Hur

ULTRA PANAVISION
1962 Mutiny on the Bounty
1963 It's a Mad, Mad, Mad, Mad World
1964 The Fall of the Roman Empire
1965 The Battle of the Bulge
1965 The Greatest Story Ever Told
1965 The Hallelujah Trail
1966 Khartoum

SUPER TECHNIRAMA 70
1959 Solomon and Sheba
1959 Sleeping Beauty
1960 Spartacus
1960 The Trials of Oscar Wilde
1961 El Cid
1961 King of Kings
1961 Carthagine in Fiamme
1961 The Savage Innocents
1961 Madame Sans Gène
1962 Barabbas
1962 Black Tights / Les Collants Noirs
1962 The Music Man
1962 Shin No Shikotei / The Great Wall
1962 Venus Impériale
1963 55 Days at Peking
1963 The Golden Head
1963 Shaka / Buddha
1961 Hercule à la Conquete de l'Atlantide
1962 La Fayette
1964 Zulu
1964 The Pink Panther
1964 CircusWorld / The Magnificent Showman
1964 The Long Ships
1967 Custer of the West
1968 Clint, El Solitario
1985 The Black Cauldron

SUPER PANORAMA MCS 70
1962 Flying Clipper / Mediterranean Holiday
1962 Sheherazade
1963 Old Shatterhand
1963 La Tulipe Noir
1964 Onkel Toms Hütte
1965 Savage Pampas
1965 Der Kongress Amüsiert Sich
1964 Fortress of Peace (short)
1967 Sky Over Holland (short)
1967 Playtime

DIMENSION 150
1966 The Bible
1970 Patton

CINEMASCOPE 55 / GRANDEUR 70
1956 Carousel (only 55 mm)
1956 The King And I

ARRIFLEX 765
1992 Far and Away
1994 Little Buddha
1993 Tour Eiffel (short)
2006 As Good As It Gets (short)

SMELL-O-VISION / TODD-70
1961 Scent of Mystery / Holiday in Spain
1962 The Tale of Old Whiff (short)

3-strip CINERAMA
1952 This Is Cinerama
1955 Cinerama Holiday
1956 Seven Wonders of the World
1957 Search for Paradise
1958 South Seas Adventure
1962 The Wonderful World of the Brothers Grimm
1962 How The West Was Won

CINEMIRACLE
1958 Windjammer

KINOPANORAMA
1966 Cinerama's Russian Adventure

DEFA 70
1967 Defa 70 (short)
1968 Hauptmann Florian von der Mühle
1969 Du Bist Min / Ein Deutsches Tagebuch
1971 Goya
1974 Orpheus in der Unterwelt

SOVSCOPE 70
See page 54

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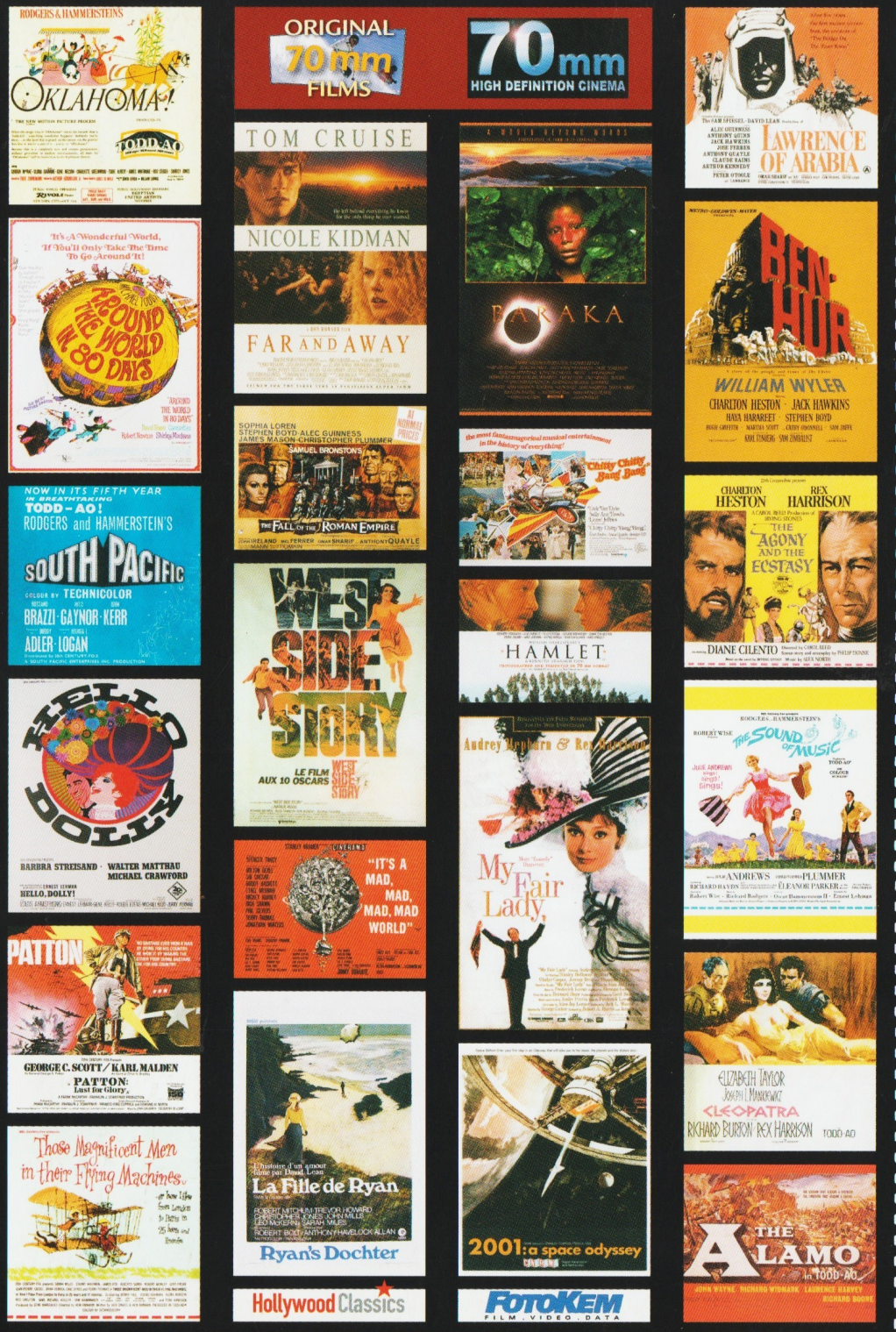

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