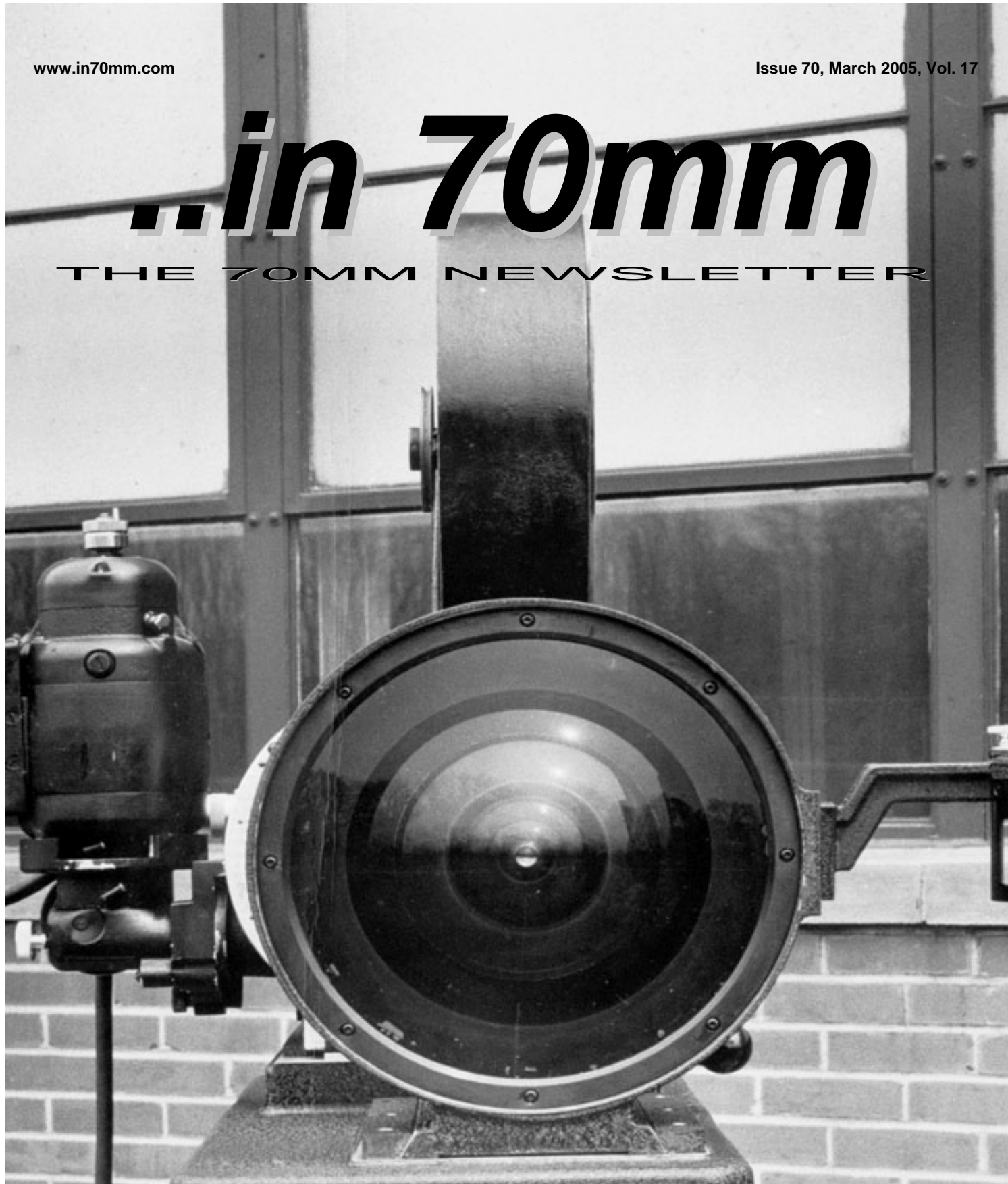


..in 70mm

THE 70MM NEWSLETTER



***Walter Siegmund Interview
Working for Mike Todd
Working for Todd-AO***

THE 70MM NEWSLETTER

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70 MILLIMETER
AND
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Widescreen Weekend 2005

Issue 70, March 10 - 14, 2005, Vol 17

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Purpose: in70mm.com - The 70mm Newsletter publishes articles about 70mm cinemas, 70mm films, 70mm sound, 70mm film credits, 70mm history and 70mm technology. Articles are by invitation and often written by subscribers or guest writers. The aim is to record the history of the large format movies and the 70mm cinemas as remembered by the people who worked with the films. Both during making and during running the films in projection rooms and as the audience, looking at the curved screen.

Mission: in70mm.com - The 70mm Newsletter is continuously building a collection of documentation, 70mm equipment, stills, ads, movie credits and a complete list of all known movies shown in 70mm and 3-panel and filmed in photographic processes wider and larger than 4 perf/35mm film. Processes like ARRI 765, Cinema 180, Cinemiracle, Cinerama, DEFA 70, Dimension 150, Grandeur, IMAX, Iwerks, MCS-70 Superpanorama, MGM Camera 65, NaturalVision, OmniVision, Showscan, Realife, Super Technirama 70, Todd-AO, Ultra Panavision 70 etc.

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From The Editor

Thomas Hauersev, Copenhagen, Denmark

Dear Widescreen Weekend Guest,

This is another special edition of *The 70mm Newsletter* published exclusively for the 2005 Widescreen Weekend in Bradford, England to celebrate the 50th anniversary of the premiere performance of the Todd-AO system. In this issue I am presenting brand new material about Todd-AO, including my 2002 interview with Walter P. Siegmund, one of the key engineers who developed the Todd-AO process. It tells the story about the early days of Todd-AO and tells the unique story from a very personal angle. A lot of work has gone into this interview and I hope you will appreciate it.

Mrs. Glenda Jensen has written an information-filled article about her days with the Mike Todd office during the release of **"Around the World in 80 days"**.

Finally Mr. Dan Leimeter, retired Todd-AO Studios chief projectionist, has written an article about his work with the company. I take great pleasure in publishing this trio of articles about Todd-AO history.

I hope you will enjoy reading this Bradford Film Festival 2005 companion. **"Oklahoma!"** in Todd-AO opened on Broadway in New York City on October 13, 1955. Todd-AO is not only big screen and audience participation, but also showmanship perfected.



2005 Widescreen Weekend Program

Thursday March 10 2005

- 14:00 **"STAR!"** in Todd-AO
19:45 **"Out of Africa"** in 70mm and 6-track magnetic stereo. In person Oscar winners Peter Handford (sound) and David Watkin (Cinematography)

Friday 11 March 2005

- 10:00 **"Those Magnificent Men in Their Flying Machines"** in Todd-AO on the curve
13:00 **"Doctor Doolittle"** new Todd-AO print with DTS sound on the curve
16:00 Michael Borrows lecture on Gene Kelly
17:00 Widescreen Welcome - Reception - drinks for the weekend delegates
18:00 **"Baraka"** in Todd-AO
20:00 **"Hello, Dolly!"** new Todd-AO print with DTS sound on the curve

Saturday 12 March 2005

- 10:00 **"Scent of Mystery"** in Todd-70 on the curve. Jack Cardiff in person
13:00 **"The Early days of Todd-AO"** - almost like a real lecture - by the Editor
14:30 **"How the West Was Won"** in 3-strip Cinerama on the curve
18:30 Walter Siegmund Q/A about Todd-AO
19:30 **"Oklahoma!"** + **"Miracle of Todd-AO"** in Todd-AO on the curve

Sunday 13 March 2005

- 10:00 Cineramacana with Audience on Stage picture, Academy of the Widescreen Weekend and Projected Pictures Trust by Dion Hanson
13:00 **"Amadeus - Directors Cut"** in Panavision on the flat screen with Miroslav Ondricek in person.
16:45 **"The Agony and the Ecstasy"** new Todd-AO print with DTS sound on the curve
19:30 **"Sound of Music"** new Todd-AO print with DTS sound on the curve

Monday 14 March 2005

- 10:00 **"South Pacific"** + **"March of Todd-AO"** in Todd-AO on the curve



for whatever reason, felt that he couldn't go. Maybe that was his own way of being a little bit aloof. But in any case it was arranged that I should go in his place and make an evaluation; just to simply tell him "What did I think of it?"

Left: Walt in the hot chair, 22 June 2002 in Copenhagen. Behind him is the DP70 and a two-foot model of a Todd-AO screen.

The Birth Of Todd-AO

Walter Siegmund interviewed Sunday June 23, 2002 by Thomas Hauerslev, Copenhagen, Denmark

Edited for clarity by Paul Rayton, Brian O'Brien, Jr., and Walter Siegmund

Clean up by: John Belton, Martin Hart and Dan Sherlock

Walter P. Siegmund: The 50th anniversary of Todd-AO and also [approximately] of my employment at American Optical [AO] on February 6, 1953. Actually Todd-AO could be considered to have begun with the fateful meeting in 1952 between Mike Todd and Dr. O'Brien at the Rochester (NY) airport, where I was the silent witness.

Who would have thought then that movies would again become so popular and lucrative? Did Todd-AO make the difference? It would be nice to think so!

Question: Tell me about your background and how you got involved in American Optical and Todd-AO.

Well, I was both an under-graduate and a graduate student at the University of Rochester in Rochester, New York. The director of the Institute of Optics, where I took most of my training in optics, was Dr. Brian O'Brien. Dr. O'Brien was at that time very much interested in the field of physiological optics, which is the study of the eye. In fact that was his specialty.

After I finished my doctoral thesis in physics, I was asked to stay on as a postdoctoral assistant, and one of the first things I worked on was a problem in physiological optics, an anomaly. It had to do with something peculiar about the detection by the eyes of flickering light (which, incidentally, sounds as if it has something to do with cinema). With black and white flickering lights you would find that, when they were in phase (for both eyes), the frequency has to be higher than if they were out of phase in order to eliminate the consciousness of flicker. This was known as "The Sherrington

Effect", and has to do with the way signals are passed from the eye to the brain. But if you use colors, complementary colors say like red and green, then according to the work that was done earlier, the *reverse* occurred, and that was the anomaly; it was not understood. It didn't seem to fit anybody's understanding of the process, and so Dr. O'Brien asked me to look into this problem again. I looked into it for some months; I can't remember very well when; it was probably 1951 or 1952. It turns out that the previous measurements were in error and, that if you did it a little more carefully, it was consistent with the black and white phenomenon and so there were no so-called reversed Sherrington effect, which cleared up the problem.

I don't know if that impressed Dr. O'Brien, but in any case he was very pleased to have this problem resolved. Then, in late 1952 he approached me one day, quite by surprise, and said:

"Walt, I'm going to go to the American Optical Company in Southbridge, Massachusetts to head up their R&D; would you be interested in joining me? Leaving the University and going there and working for me at American Optical?"

I said I'd like to think about it and I thought about it for exactly 24 hours. I talked with Lois about it. We had been married then a little over two years. I said we would give it a try. He even went so far as to say: "Look if it doesn't work out, I will arrange with the University so you can come back a year from now and just pick up where you left off". Of course, it never happened and I stayed in New England and I'm still in New England.

It was a wonderful opportunity; ... one of our first problems we got into was Todd-AO.

Tell me about your visit to the Broadway Theatre and Cinerama – What was your reaction and who did you meet?

First of all, Mike Todd had approached Dr. O'Brien. In fact I was present at that first meeting, which took place at the Rochester [NY] Airport. Some days afterwards he insisted that Dr. O'Brien come to New York to see the Cinerama process, but Dr. O'Brien

Well the fact is, I can't think of the exact timing, but I think I went in the latter part of the day. I met with Mike Todd, Jr., in New York City, and then he took me out to one of his friend's houses somewhere outside the city. Then we went back that evening to have a wonderful steak dinner at a famous restaurant whose name I should remember [Peter Lugars]. They served only steak and sliced tomatoes; they were famous for that I guess. It was some of the razzle-dazzle that the Todds used, to soften you up, so to speak.

The following day he escorted me to the [Broadway] theatre where I saw a demonstration of Cinerama. From the top, so to speak, but I was also given the privilege of going to any place in the theatre, observing from whatever location I wished. One of the few things Dr. O'Brien asked me to do was to measure the screen brightness, and he gave me an instrument, which was his own personal photometer, a very "ancient" instrument but also something that was very conveniently operated. I took a series of measurements of the screen brightness, as though that was really important. The *important* thing, of course, was the overall screen quality, and then the complexity of the system, all of which I reported to him in one form or another. But when I called him - and I think he asked me to do this - I did use the well-known expression "WOW"! And it was a wow-situation. No question about it, because at that time I was very intrigued with all kinds of motion pictures, and to see this demonstration was very special. It was the best I'd seen of any motion picture, and "WOW" was a simple way to express that.

What were your main responsibilities with the development of Todd-AO at American Optical?

Well, it is getting a little hard to remember, but one of the things I was asked to do was to lay out the shape of screen precisely, with respect to the distortions that were contained in the wide angle Todd-AO lens. Once we knew exactly what they were, it turns out there's a simple mathematical relationship between the shape of the screen, the position of the projection lens, and the distortion characteristics of the camera lens. But you don't know those parameters until the lens has been completely designed. The lens was designed to try and create the desired depth of the screen, which I think was on the order of 13 feet, but we wanted to know what the *exact* shape should be. I remember doing those layouts in the drafting department of American Optical. Because I came with Dr. O'Brien, I was privileged to have sort of free run at the various facilities. It was a nice way to start a career - to have license to do things (anywhere). Everyone was very co-operative. I worked in their drafting department laying these screens out. Then the question was "How should the screen in fact be made"? How were current motion picture screens

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manufactured? We found out it was done by embossing plastic with a large number of very, very small concave spherical facets. Well, this worked very well with a flat screen, or one, which was very modestly curved, but our problem was the very *deeply* curved screen. If we had used that technology as it was available at the time, we recognised, that in a deeply curved screen, it would be necessary to modify the facets very substantially from those near the centre of the screen to those near the edge, in order that light which struck the screen would not bounce straight across the screen and wash out the picture. So, we attempted to devise a series of facets, which were tilted, in relationship to the distance away from the centre of the screen, so that every facet would return light towards the audience and not to the screen.¹

That was the concept; the question was "How could it actually be done? What kind of equipment would we need?" One of the people at American Optical's Metallurgy department, made an extraordinary suggestion. He said that it would be possible to make up the screen embossing rolls by embossing a piece of wire, which the company was using regularly for the manufacture of eyeglass frames, and embossing them in such a way that they could be wound on a drum to form a continuous pattern of slightly changing slant of facets.

First of all it sounded like one of the very few ways one could do it, and secondly as something we could do ourselves at American Optical, and have complete control of the operation, rather than subcontracting, and seeing how it would work out.

It sounded awfully good on paper. But we discovered to our dismay, as we went further and further into the process, that very minute defects were very pronounced on the screen. In particular, the repetition of the rolling embossing wheel, which made the facets, showed up periodically all through the screen, giving a wavy pattern which lent a texture to the screen that you wished was not there.

The screen should basically be "invisible". You should see only the image on the screen. The screen itself should not impose on your vision. We discovered when we projected still pictures on the screen that these defects were pretty well lost when you concentrated on the image, but as soon as the image moved, relative to the screen, the two "separated company", so to speak, so that any defect from the screen remained fixed while the picture was moving.

It ultimately proved that no matter how hard we tried, we could not make the screen free of those defects, which were intrinsic to the process, and it had to be abandoned. In place of the highly reflective faceted screen we substituted a screen made of ribbed white material with grooves impressed to reduce light from bouncing from one side to the other.

This is a serious problem with a deeply curved screen - there's always a certain amount of crosstalk, or cross illumination, which reduces the contrast of the image. But it was sufficient for the purposes, and it was done very quickly after we found we could not accomplish the higher

(efficiency) reflective faceted screen. And the lower gain of the screen was acceptable. But we didn't get all the things we had hoped for from the original screen.

I was responsible for the work on the original screen, and it was one of my profound failures not to produce an adequate screen. But by that time I had been transferred to the problem of producing the optically corrected print and so others took up the issue of the screen, and were successful and therefore we did have a screen material that was uniquely Todd-AO. It worked, and was used for the opening and subsequent showings.

Tell me about how AO organized the development of this huge undertaking and how many people (and who) were involved.

Dr. O'Brien had just taken on the responsibility for running the Research and Development Department for American Optical. That meant he inherited a group of scientists and engineers who were already in place, some of whom were suitable for this kind of undertaking and some of whom were not. He also had pretty much *carte blanche* to hire new people because very quickly [a] number of new people was hired many of them from the University of Rochester. So we were able to bring in some new people to work on "it". But in addition American Optical had not only a research department in Southbridge (in Massachusetts where the headquarters were), but also marvellous engineering facilities in the plant in Buffalo, New York.

These engineers were accustomed to designing optical devices, microscopes, telescopes and binoculars - all those kind of things. They were ideally suited to manufacturing any kind of optical component that might be needed. In addition there were optical design experts at Southbridge that were accustomed to working primarily with ophthalmic lenses, but they knew lens design and therefore could switch their attention from ophthalmic lenses to compound lenses necessary for the process.

So there was a lot of talent available. Additional talent was being brought in, in the form of engineers and scientists and so quite a large group of people were available when we started.

Nevertheless despite that, the initial design work was done, in case of the (wide angle) lens, by Dr. Robert E. Hopkins of the University of Rochester Institute of Optics, who already had a significant amount of experience in wide-angle lens design. He had designed an even wider-angle lens for a different kind of wide-angle screen process years before and so he already had that as background, and he knew what the approach would be. In addition, there was a certain aspect of the design of the lens, which would require an aspheric optical component at the rear of the lens. The technology with which an aspherical lens could be produced had been jointly developed by American Optical and the Institute of Optics. In fact I had worked on that process myself, so I knew a bit about that particular aspect of it, but I wasn't asked to work on it. Dr. Hopkins, in designing that lens, had the additional freedom to design the lens knowing it could include an aspherical component which would help correct the lens for all the conditions that were necessary for the best performance.

Strangely enough the first optical design was only for the wide angle lens with the 128 degrees of field of view.²

Subsequently other lenses were designed, such as projection lenses, and narrower field camera lenses. In terms of the mechanical design, the work that was done later, on the corrective printers, also made use of some of the talents that were already in place in the research department, a group of design engineers who were accustomed to designing optical equipment. All they had to do was to get a new set of requirements specified and they were off to work on those. I think specifically of Henry Cole, for example, who is an excellent engineering physicist who understood the kinds of designs that were required. Some of the work was also subcontracted and wasn't done at American Optical at all; the most significant being the [DP70, ed] projector, but I'm thinking here of the correcting printer for which American Optical had the primary responsibility. Even some of the electronics for the printer was subcontracted, because we didn't really have a lot of electronics background in the company.

How many people were involved?

Well at one time they talked about a hundred people. I don't know if it ever reached that number, but it might have reached fifty. As far as names are concerned, well, they begin to fade a little bit. I already mentioned Henry Cole as an engineer who helped expedite the camera and later worked on the printer. Brian O'Brien, Jr. was heavily involved in this program. George Simpson, a very good friend of mine who just passed away (June 2002) was very much involved in the printer program. Dr. Charles Koester was another of the people who worked on it. In fact, when we were doing the actual printing in New Jersey, his wife also worked in the laboratory as well. It will take a while for me to try to remember all the names that were involved, but it involved a team in Southbridge, and at Buffalo, in the AO Instrument Division.

The camera itself was a very specialized technology and, after working with a couple of old cameras that were found in the archives, new cameras were designed and developed by the Mitchell Camera Company, and that became the main source for the camera itself. We were not in the position to contribute technology for that. Mitchell was, after all, the world's expert in that area.³

The [DP70] projector, of course, represents a wonderful story by itself, and the coordination of the projector design was done again through the instrument division at Buffalo, New York. Mr. William Peck, who became my boss years later, was the person who coordinated that work with the Philips company in Eindhoven. Mr. Kotte was the engineer at that company who was responsible for that wonderful piece of equipment that you see behind me.

² To simulate Cinerama's 146 degree optics

³ At that time 90% of the world's motion pictures were shot on Mitchell cameras. They were chosen to first assemble the remaining Thomascolor cameras and modify them for the 5-hole pull down, and later to develop a new Todd-AO camera for the 65mm film. Henry Cole spent much time at Mitchell supervising this construction and development. *Brian O'Brien, Jr.*

¹ We could not use the Cinerama screen concept with a single projector.

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How soon were the basics of the new process decided? How soon did you come up with the principles of each component?

It's hard for me to recall that exactly, but I can remember being in the attic (the uppermost floor) of the Institute of Optics building and projecting pictures onto a screen, to try to get some feeling for what was involved in wide angle projection, and there was a feeling at the very beginning: How would we deal with the distortion of such a wide-angle system? How did we understand what was happening in Cinerama? And there was some confusion there, I think, until Dr. O'Brien pointed it out to us, (and I give him credit for that and he also got a patent on his concept). He pointed out that the natural distortion you will get from a "fish-eye" lens - which has barrel distortion that makes objects near the edges of the field more compact, more squeezed together than at the center - was precisely what you *want* to have in a lens if you are going to project onto a deeply curved screen from a fixed point behind the centre perspective with a distortionless lens.

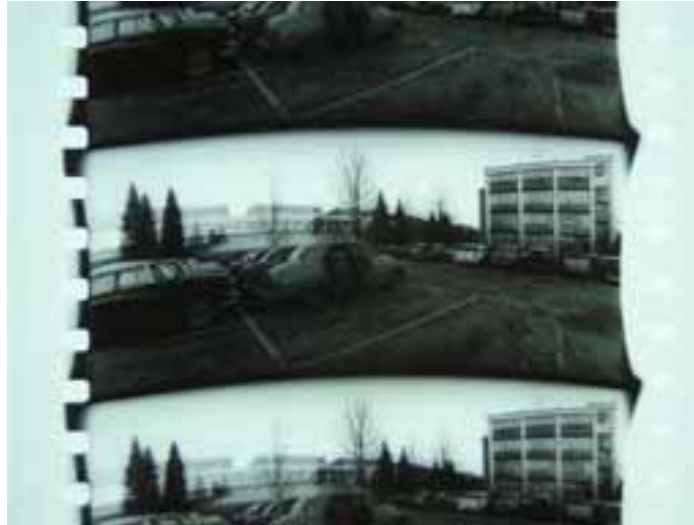
He saw this basic geometry and, once he pointed that out, in a way it fell into place. In other words, what the system demanded became an automatic feature of the system and in the design of a "fish-eye" lens you get exactly the kind of distortion that you need. Now, you can argue that is only (exactly) true from a single point in the audience, but in fact it spreads out enough so everyone can get a fairly good feeling for the perspective and a "sense of participation" that comes from it. But only one person is in *exactly* the right place to see everything precisely reconstructed by the projection system. Once this was established, then we were basically home free. We could have the deeply curved screen. We could have a fisheye lens - which is the only way to design a very wide angle lens anyway - and then the two were melded together. The projection lens system could be more or less conventional, and that was also a goal.

When Mike Todd said he did not want to change a theatre, he wanted to be able to project in a normal fashion from an upper booth, then we knew that ordinary projection lenses would be appropriate. What remained - and what carries forward now to the correction of the residual distortions - is the peculiar shape of the picture as seen from the (usual) projection booth. When you have a deeply curved screen it does not look like a rectangle from the projection booth, and yet all frames up to that point were simply rectangular frames or square frames.

Can you comment on the notion that Todd-AO was designed to reproduce Cinerama.

We didn't try to reproduce Cinerama - we made our own process. It seems to me that there were certain parameters, which more or less were expected. Something like a 2:1 ratio between width to height. It had to do with the width of a stage and the height of a proscenium arch, through which the screen in general would have to pass, and yet not project too far into the theatre. So there were some parameters dictated by theatre shapes, but we knew the wings of the screen would extend well beyond the proscenium in order to get the width. And also there may have been some sense that a 2:1 aspect ratio was reasonably favourable from a point of view of

vision. It was not "slot" shaped like CinemaScope. This was a more appropriate rectangle to begin with, and then the question was - how much film would you want to devote to this? In fact what was the film to be, anyway?



Black and white Todd-AO test footage of the American Optical parking lot. Note the frames are curved

I think it was quite early on that a decision was made regarding this; in order to establish a new standard of sharpness for a large picture we needed to have more "real-estate" ⁴ on the film. It had to be bigger. So how could it be made bigger? Merely through width. Since many different widths had been used in the past this was probably dictated (and I am not quite sure how this were done) by the existence of some old 65mm equipment ⁵ which allowed us to demonstrate some concepts early on, by digging up this old equipment and re-using it. I remember we found a series of projectors for 65mm film

⁴ Beside the sharpness reason (keeping the same magnification for twice as large a screen as standard 35mm films) we needed 4 times the gate area to put enough light through to maintain the screen brightness on the larger screen. *Brian O'Brien, Jr.*

⁵ Several years before, the Pullman Company had been forced by the government to sell their railroad sleeping car business. This left them with a large amount of cash, and they were looking for businesses to invest in. They engaged my dad to consult for them on a new color motion picture process called Thomascolor. It involved a camera with an image splitter to record three black & white color separation images on each frame of 65mm B&W film. These would then be recombined through red, green, and blue additive color filters and superimposed on the screen by the projector giving a full color picture. The present day monopack color films were in early development, so the future of Thomascolor did not seem bright. Pullman decided against investing, and the process never went anywhere.

I heard a rumor about some wide film cameras being stored in a warehouse in Hollywood and immediately flew out there to investigate. Sure enough it was the old Thomascolor equipment. There was one complete camera, and parts for five more, a complete set of blueprints for them, a 65mm film perforator, edge numbering machine and a small film splicer. I immediately issued a purchase order for the whole collection and had it shipped to Southbridge, and that is how we started with 65mm film. *Brian O'Brien, Jr.*

made by the German company Ernemann. We found some 65mm cameras made for the Thomascolor process, which had an 8-hole pull down that could be modified to a 5-hole pull down. 5 was established by the width and height parameters that I just mentioned,

something like a 2:1 ratio. 4 holes would not have been enough (that's a standard for the Academy 35mm film). 6 holes would have been excessive and would cost that much more in film. So 5 holes was the compromise.

How all of this was done I'm not sure. I don't think it was done necessarily in a large committee. I think it was done by a group of

people just sitting together saying, "This is rational, why don't we go with it?"

And at a much later time it was decided that 65mm film would not provide enough space for the soundtracks, which were to be 6 magnetic soundtracks, so, it became obvious, (or, not necessarily *obvious*, but it seemed reasonable!) to extend the film width to 70mm for the release print, to carry the soundtracks. But there was no need to put 70mm film in the camera, because you don't put the soundtracks in the camera. You put them on later, and so 65mm continued to be used in the camera and 70mm in the projector. ⁶ And again, it was partly dictated by the availability of some 65mm equipment. If someone would have said, "Why don't we make it 62,5mm", and you would start from scratch, and it would be ridiculous. There might have been some other sizes around, but we didn't know of them. Somebody in the system must have known about this existing [65mm] equipment, which was still stored away in the archives somewhere in Hollywood, and it was dug up.

Didn't you try to recreate Cinerama?

This, of course, was the premise of the entire process. Cinerama had made a magnificent showing of a wide-angle system, but it didn't have the versatility, for storytelling, which is one aspect. But the worst aspect was that it used up a tremendous number of seats in the theatre! It was very costly to install, requiring 3 projection booths, which at that time had to be manned separately - that was another cost factor - but the removal of a large number of seats, in the most favourable part of theatre, was in itself already a deterrent. It was simply very *costly*.

What a theatre owner would like to do is to install the least equipment that he can use to get the full benefit of the system. The [original] upper booth was available since it was built in. Adding booths was an expensive

⁶ The added 5mm (from 65mm to 70mm) was added outside the 65mm perforations so both negative and positive would run on the same sprockets. *Brian O'Brien, Jr.*

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thing to do anyway, because of all the installation and safety factors that had to be taken into account. The screen might not be that big an expense, although the owner would have to install additional sound equipment, but with those changes he would be in business in his own theatre as quickly as possible, with the least cost, which is a big factor for him. Cinerama, as I say, was a tremendous display of cinematic technique but it was a prohibitive process from a point of view of wide use of the process. I'm not sure how many Cinerama theatres of that type that I saw in New York were ever built, but it would have been a very costly way to proceed. At least that was how Mike Todd perceived it.

What kind of person was Dr. Brian O'Brien? Any good anecdotes about him?

Dr. O'Brien was a scientist who was very precise in his scientific work and earned his reputation in three areas. He had worked in the area of nutrition, on vitamin D supplements for children, using ultraviolet light. He had done a magnificent job there, and he was also an expert in vision. But he actually had trained as an electrical engineer and he knew engineering extremely well. He was also the type of person who could discuss almost any subject, being a person with a fantastic memory, and a wonderful way of expressing his ideas. He was not reluctant to express his ideas. If anyone brought up a subject, he could almost invariably add some new elements to the discussion, so he was a great teacher. He was a very effective scientist. He was a good organizer.

Dr. O'Brien, in my opinion, loved fieldwork where he would take a group of people out and do a project away from the school, or away from his home base. One of the areas had been in studying the distribution of ozone in the upper atmosphere, which he attempted to do in 1937, by attaching a spectrograph to reach what was then the highest-achievable altitude to a helium filled balloon. Well, there were some failures involved with that and he never got the information. But in 1948 when a new kind of balloon technology came along, he was anxious to renew those measurements and we - Dr. Parker Givens and I - brought home the necessary data from which he could conclude that, in fact, most of the ozone was higher than the maximum altitude that the balloon could achieve.

He "had" made a tremendous contribution in World War II working with a team of people in the field of night vision, using a technology which is now totally obsolete, but at the time was the best available. And for that he received the medal of merit from the American government for having done such a magnificent job. Again, he had worked with a team of people, perhaps as many as 50, both students and teachers, who were reconfigured to do this kind of work. I was one of them, as a student at that time, also working in that field.

But let me also say that, as well as being a good scientist and a good manager, he was also more of a showman than he would like to admit. He liked to present his material in an effective way. He was not just a typical, let's say, college lecturer, who would tell what he had to tell in a dry manner. He had a way of making it exciting and I think, when he recognized this in Mike Todd, he realized that he and Todd could actually get

along very well because they had some of that same interest. Todd was much more of a showman than Dr. O'Brien was, and much more aggressive. But they recognized, I think, this talent in each other.

I enjoyed working for him enormously. He was a great person to work for.

He also did something, which I can only just touch on briefly: He introduced the field of fiber optics in the United States of America. Now you might say, is that possible? Yes it is. It is a long story and it is a separate story, but one can say, almost as a quirk, he brought fibre optics with him when he came to American Optical, and a few years later it began to be developed. And it is still going very strong at what is now the offshoot from American Optical with the heritage that was developed as early as 1954 under Dr. O'Brien's tutelage.

How many years did he work for American Optical?

I think his contract, when he joined American Optical, was for a period of five years. That encompassed all the work of Todd-AO, which was the first project he got into. Unfortunately, from my point of view, Todd-AO sort of got in the way of what might have become a whole series of even more important work. It just seemed so exciting at the time that, essentially, everything was dropped in favour of getting that job done as quickly as possible, because of its enormous potential for profit for the company. The fact that it didn't achieve that, I think, was a problem for Dr. O'Brien - and a problem for the company - and my understanding is that he elected to complete his five-year period of the contract and then take up what might have been his "severance" from American Optical after the five years.

In fact, in the last one or two years, he was not very active in the company. He did consult later on, in the field of fibre optics, and perhaps in some other areas, but I was only familiar with his consulting in fibre optics. Then he became very active in government work, and did that for the rest of his active life.

"We selected the lenses to have some sort of distortion" - can you explain that?

Well, in a way I've alluded to that already, and that is when you design a very wide-angle lens, you have a couple of possibilities. One is to make it absolutely distortionless. Such a lens, for instance, is designed for aerial photography - for doing mapping. You have say, 90 degree field of view with such a distortionless lens, because you want the image to be an exact reproduction of what is viewed on the ground. Wide angle distortionless lenses were used for many years in taking architectural pictures and sometimes, and you may have seen this, used to take a picture of a large group of people, let's say at a banquet or something like that. If you look at such a picture from the wrong perspective, i.e. looking at it from further away than the centre perspective, you find that, in fact, there is an enormous amount of distortion in such a picture. If you look at the image of a face near the edge of the picture it is completely distorted. It becomes a wide oval instead of a round [circle], or whatever it should be. And it's really very ugly under those circumstances. So a truly distortionless lens on a curved screen would

have resulted in serious distortions from the point of view of the viewers. But, beyond that, it is very difficult to design such a lens with a high optical speed, an F2 or something like that. Those older distortionless lenses were usually designed to be F16 or F22 with an extreme of maybe F11 or something like that. But never at very high speeds. If you want a very high-speed wide-angle lens it really has to be, what we call a "reversed telephoto" lens, or a fisheye lens. With a fisheye lens, you get barrel distortion. But we worried about that. We said - "What are we going to do about the barrel distortion?"

As I said earlier, Dr. O'Brien finally realized that you *want* some barrel distortion in order to take care of the deeply curved screen in conjunction with a "distortionless" projection lens. And that is where the melding of the two came together. The reason that was fortuitous is because, now you can design a fisheye lens that was, let's say, F2, so it could be used at low light levels. It could be a relatively fast lens and give excellent image quality, which is what it did. The big "bug eye" lens actually had superb image quality, but it also contained something like 15 or 20 lens elements in order to accomplish that. So it is peculiar that you don't want a "distortionless lens"; you want a lens with a controlled amount of barrel distortion.

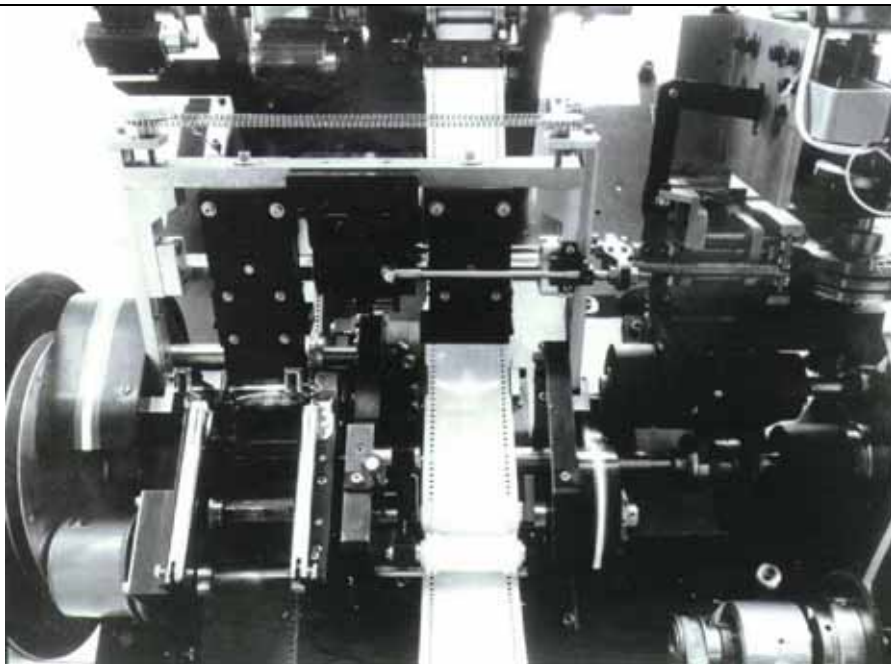
Now the other side of that coin is that some of that distortion is *not* very desirable, in that it makes vertical lines near the edge of the field curve inward. Anyone who has looked at fisheye lens photographs will recognize that, and that it needs to be corrected. Fortunately, it is not as bad as it is for, say, a format like 3 by 2, because the vertical lines are not as long. But they are long enough to be troublesome! A telephone pole appearing near the edge of the bug eye lens is definitely curved. We dealt with that later in the printing process - that was one of the goals.

I was involved, I think, in almost every technical discussion that took place, but not necessarily the business discussions. There was no need for that. It began to gain momentum. It started out with a group, maybe with the three or four of us at the very beginning: Bob Hopkins, Dr. O'Brien, myself, and a fellow named John Davis. He got in very early on. And some names I've already forgotten, people from Buffalo, got things going.

We had quite a few people working on different aspects of it (he overall Todd-AO process). Once when we had at least one printer operating, the printing was done in New Jersey⁷. It wasn't done in Southbridge except maybe for some very early experiments. The printing of "**Oklahoma!**" was all done in New Jersey.

After the opening of "**Oklahoma!**" (For which we made as good a print as we could up to that time) there was a lot of disappointment. Everybody trusted us to come up with a good print that would be very acceptable under normal Hollywood criteria. Well, I think, when this failed to happen, the

⁷ Our printing laboratory was set up in rented space in Fort Lee, New Jersey to be near the Consolidated Film Industries film processing facility. They were a commercial motion picture printing and processing operation as a division of the old Republic Pictures Company. *Brian O'Brien, Jr.*



distortion question and I did that on my own, without getting too many people involved, because I wasn't sure it would work - but it did, and it looked like an interesting solution.

Two views of the distortion-correcting printer

Tell me about the distortion correction printing process - how did it come about and how

first thing that happened was that they took the master negative back and used it to make contact prints and we never saw it again. But what they gave us was a duplicate negative that was made with internegative, and we continued working on that. And that was when I got more deeply involved in the printing process, and we were working on that, trying to make a better print.

But the real problem was that we were doing it without any expertise in that particular activity, and it does take expertise to make a good print! We were kind of naïve about it, and, as a result it was a very time-consuming and very inefficient process. And then, after we found that we were stumbling around quite a bit, someone suggested that we bring in somebody who actually had some experience [printing]. And they helped us enormously to get an acceptable print. But we were still working with the duplicate negative.

Now what happened with the prints we made I really don't know. At one point, after we worked with the duplicate negative - after a period of about 6 months - I dropped out of it. I went back to Southbridge and that was it, as far as the basic process was concerned. But when I got back to Southbridge I undertook this other activity that I mentioned, using an optical solution to the

did it work.

We recognized, very early, that if you were going to project from the upper booth you would have to make some optical compensation. You can't just tip back the screen ... You can ask. "Well, why not tip back the screen, so that the axis of the projector is perpendicular to the centre of the screen?" Well, that means tipping it back as much as 20-25 degrees, and so the image, as seen from the orchestra of the theatre, would look ridiculous! The horizon would go upward like a pan, you know, or like a dish, so that wouldn't work very well. You want the horizon to appear *level*, at least from the point of view of a major part of the audience in the orchestra of the theatre.

If people up in the balcony have to look at a line, which isn't particularly straight, they may make an accommodation for it. In any case you have to decide *where* you want your best picture. And the decision was made: we wanted it to look like Cinerama, which meant that the horizon was straight for people sitting on the floor level of the orchestra level. And that was another way of looking at the question.

Well, to do that with a curved screen meant that the image really had to look like

the screen looked as viewed from the projection booth at 25 degrees, that means it has what we called a "droop" shape. I mean, it looked like an "upside down" smile. The curvature is substantial. If you project an ordinary contact print onto a deeply curved screen, with the screen strictly vertical or plumb, then you would get an enormously curved horizon on that screen. So that was one of the considerations.

There were two further considerations that came along. One is that, in addition to the curvature, which we called the "droop", you have "keystone" distortion which, if you again looked at the screen from the point of view of the projection booth, you realized that the bottom of the screen [-image] will be wider than the top and if you don't correct for that, then vertical lines are going to be very, very slanted [kind of trapezoid] when seen from the orchestra part of the audience - so that had to be corrected. And finally, the third correction was for the fact that the "bug eye" lens (the 128-degree lens), would cause vertical lines to be curved due to the fisheye effect, and that had to be straightened out. So we had three kinds of distortions to compensate for projection from an upper booth, and the question was - how should that be done?

Well, we played around with a number of ideas. I remember, in fact, I did some of the very preliminary work, involving using a lens to project a slanted object onto a slanted image plane, and so forth. And also another way of correcting the distortion due to the curvature of the 128-degree lens, of having a horizontally curved negative projected onto a curved print, sufficiently steeply curved using the adjusted geometry of the projection lens. Unfortunately, none of these things could be combined into one operation by simple projection. It took something more than that and, after playing around with some ideas, we hit on the idea that we would project each *line element* of the negative onto the print film with slightly different conditions which meant that the magnification of each line element, or each slit element, if you like, [is different] and the way in which you change the magnification is by moving the [printer-] projection lens back and forth along its axis, to either enlarge or reduce the size of that image for that particular line element at that particular instant.

We had a cam-driven "relay" or imaging lens moving in synchronism with the motion of the film so that each line element of the film was treated slightly differently. And in that way, you could correct keystone, you could correct the barrel distortion (as we call it) and you could correct the barrel distortion not just for one lens (the "bug eye" 128 degree [effect, ed]), but also for the intermediate lens, which had half that field (64 degrees) and which also had barrel distortion. So you have in fact 3 different settings for the distortion.⁸

Because the people of Hollywood said, - "we can't work a story-telling movie with only the wide angle, fisheye lens - (128 degree lens), we need some narrower-angle lenses to tell stories, to get (good) close ups".

So this lens was designed to provide only a 64-degree field of view. That's the full

⁸ This - in fact, just today [22 June 2002], I brought Thomas this lens, which was the prototype of the 64-degree lens, which was designed by Dr. Robert Hopkins.

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field, and then two other lenses were selected and mounted to provide two narrower fields of view, 48 degrees and 37 degrees, and those four lenses became the standard for the Todd-AO system.

Right: Close-up of the 64 degree lens.

Regrettably, despite the fact that the whole system was supposed to resemble Cinerama with its 146-degree field, the Hollywood directors decided that this was unusable for storytelling purposes, and practically every scene subsequently done in Todd-AO was done with the narrower field lenses!

So you might say the system was "compromised" almost from day one.

But, I shouldn't really call it "compromised" in the sense that it wasn't an effective way of making movies. It's just that if [using only the "bug eye" lens] wasn't what we *thought* we were doing! We thought we were reproducing Cinerama, and what we were actually doing was putting more conventional movies on a very wide screen. But that still required that we develop the droop-correction process because of the requirement to project downwards at say 20 – 25 degrees from the booth.⁹

Now, how was that printing really accomplished?

I will give you some idea. You do it by imaging one line at a time, but in a continuous fashion, each line being slightly different from its neighbouring line for the full frame and then you start over again. In other words, the cam moves continuously as one frame is being printed and then it resets itself and starts over again with the next frame. And so the thing "clonks" along, moving the lens back and forth, back and forth for every single frame. And the trick was to make this run fast enough to make a practical printing process.

How many printers did you have?

We first made a "Mark II" printer, which was based on a slightly different principle, and it was the one we started with at the printing laboratory in Fort Lee, New Jersey. That was to get going, so we had *something* to show. Meanwhile, in Southbridge, three Mark III printers were being prepared and they were going to be run about six times faster, I think, than the Mark II printer.

The "Mark I" printer was strictly an

⁹ For trade secret reasons, we did not want details of our distortion correcting printing process to be known in the industry. Typically in the industry there were two types of printing. For special effects, prints were made on optical printers that printed one frame at a time, (step printing) with essentially a projector pointed into a camera with optics in between. This produced prints with transparent lines between the frames as in any camera. For production release prints, continuous contact printers were used where the negative and print raw stock were pressed together and run rapidly past a light source producing a contact print. In this case the clear frame lines in the negative let light through and so the print had black frame lines.

While we let it be known that our printers were continuous printers (not step printers), in order to confuse the competition our printers had a cam operated shutter that cut off the light during frame line passage. Thus our prints all had clear frame lines, as though done on a step printer. *Brian O'Brien, Jr.*



experimental unit and was never used for the printing of any part of the films that were shown. It was just an engineering model. The Mark II was set up as an operational model, but it was *extremely* slow. It would have taken months to make one print! And that was impossible. Those of us who were at New Jersey trying to get this system running were constantly in touch with Southbridge. "When can we get the Mark III printers?" Well, they finally did arrive, and they did speed up the process and we did get a print made in time for the opening [October 10, 1955], which had been scheduled previously for December 1955.

I'd like to tell the story of what I probably should have done - since I happen to be that person (perhaps someone else was with me) who actually *drove* the first print from the New Jersey laboratory to the Rivoli Theatre. I would have done the whole system a great favour if I had stopped in the middle of the George Washington Bridge and taken that print and *thrown* it over the edge, and told them "There is no such print! Show a contact print!, and forget about the corrected print". But I didn't dare do that. But, looking back at it, it might have been a good thing to do, abandon that print, because it had serious flaws. Those turned up in the reviews that were printed the day after the initial showing. But it did have the distortion corrections that were called for. *That* part worked. It was little flaws, cosmetic flaws if you like, that spoiled the print.

Did you attend the opening night of "Oklahoma!" at the Rivoli and what was the reaction to the new medium – any good anecdotes.

Yes I did. It's vague in my mind now whether I attended the morning show or not. There was a morning showing on a Monday morning for the professionals and for the reviewers, which, incidentally, was unheard of. To get people to review a motion picture in the morning was an insult. They should have been shown the movie in the comfort of an evening, which was traditional. But someone decided to do it on a Monday morning. I think I might have been there for that, I'm not even sure I can remember. I know I was there for the official showing to a black tie evening crowd. You have to tell me when that was.

It was October 13, 1955

But I do remember attending that, and it was a great event in that regard, but the print was still embarrassing.¹⁰

What did [director] Mr. Zinnemann say? Where were you sitting?

Well, it turns out, that was kind of special. I had the privilege of sitting with Fred Zinnemann and Arthur Miller, who was not the Arthur Miller of "Death of a Salesman" but *another* Art Miller, who had been hired to oversee the printing process at Fort Lee, New Jersey. And the three of us sat there together, watching the film. Fred Zinnemann really was very unhappy with seeing some of the glitches in the film, and he said to Art, "How could you deliver me film like that?" – or words to that effect. There was no good answer for him. I can't remember what Art might have said to him, but I think he [Zinnemann] just felt the system had not been perfected and he was expected to work with equipment that wasn't up to motion picture standards.

Well it was, in a sense, experimental equipment, we have to admit that. That's why I say it might have been better to "deep six" the entire print and tell them to go with the contact print.

You might ask - "How can you go with a contact print from the upper booth?"

- well you couldn't, but there was a *lower* booth already designed and built into the Rivoli Theatre, so it could have been projected from there.

How many distortion corrected 70mm prints were shown other than at the Rivoli Theatre in New York?

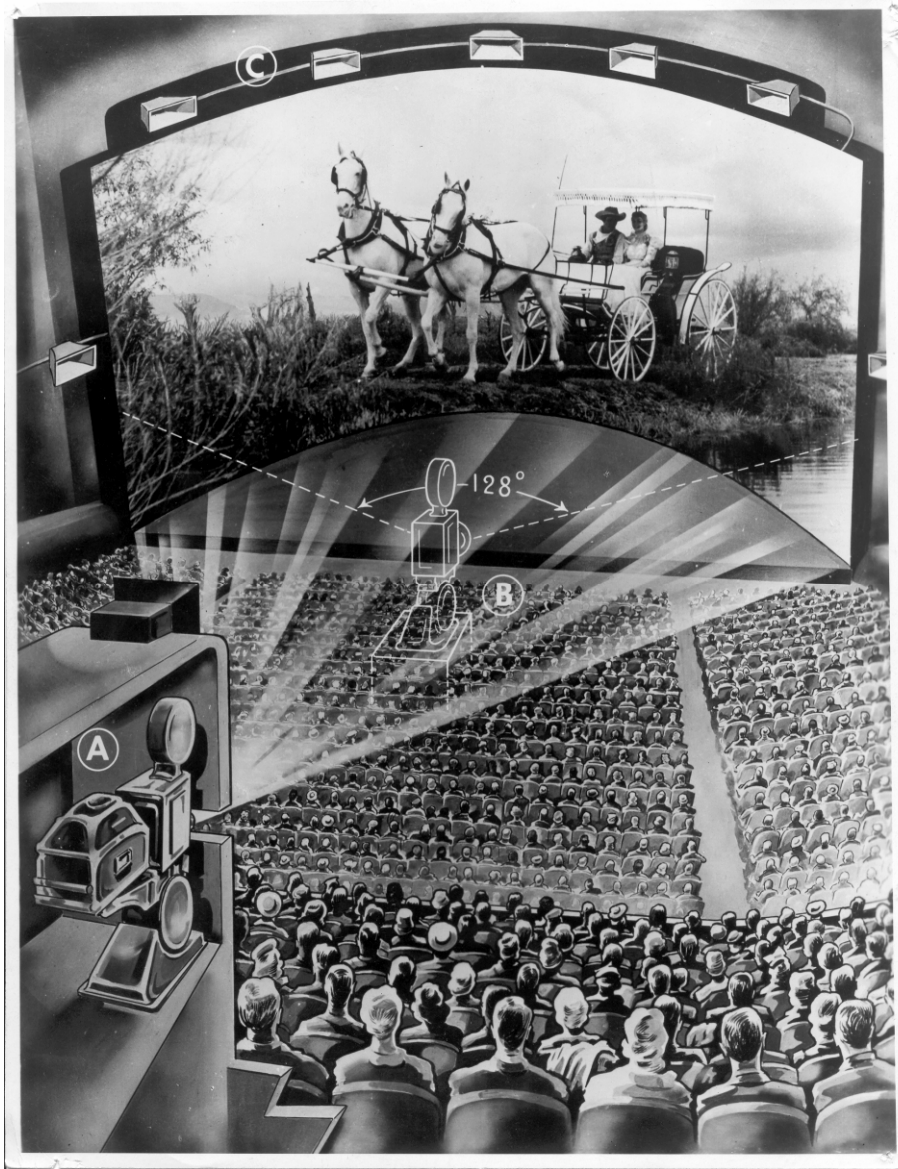
I don't know, I'm sorry to say. I have no idea what became of the system after that. I was working on getting additional prints made after the initial "**Oklahoma!**" print, and then at some point it was decided that there should be other people involved in this. I think we turned it over to people with more professional experience. I was working, you know, with no background in the motion picture business at all. Let me tell you though, as a little sideline that, if someone had asked

¹⁰ The print was certainly embarrassing, but through absolutely no fault of ours. The negative we were given to print was so badly scratched it was unbelievable. Here was a piece of photographic film whose production cost was slightly more per mile than the eastern extension of the Pennsylvania Turnpike over two million dollars per mile and it was destroyed by a union negative cutter. I watched her, over at Consolidated, take scene after scene, strip it off onto the floor, splice it and wind it up, floor dust and all. We did our best to rescue it by lacquering it, but this was only partially successful.

Since we were projection printing (even though in a continuous manner) negative scratches scattered light out of the optical path and show up as white scratches in the print. With the conventional contact printing the light source is diffuse and the scratches don't show.

The process of scene by scene color correction is called "timing" in the motion picture industry. This is done by viewing a projected answer print and noting the amount and type of color correction filter needed for each scene in the printing process. At the insistence of the producers, the timing of the final print of "**Oklahoma!**" was done by a professional union timer from Consolidated. Therefore, any color correction errors were his not ours.

As a result, the Todd-AO process was blamed for all the mistakes of the motion picture professionals, while our process itself was technically very successful. *Brian O'Brien, Jr.*



me in, say, in 1950, "What kind of career would you like for yourself eventually? I would have said, "I would like to have been an optical expert in the motion picture business". I would have "liked to have been": and briefly I was (big smile). But after three years of Todd-AO I was glad to go on to something else.

If we had been more successful, maybe I would have gone further with that activity, but I had very little contact with the motion picture business after that. I moved on to some other activities, including how to make gradient power eyeglasses, and things like that, which were more in line with American Optical company and then, as I mentioned, Dr. O'Brien had started the idea of fibre optics, and I actually moved into that and spent the rest of my career in fibre optics.

Were distortion corrected 70mm prints available with and without striped magnetic sound?

Oh yes, definitely. In fact, that print that we made and sent for the Rivoli I believe had been sound tracked...I take that back - because I don't know when they would have striped it at the time; that must have come later. But I have in my possession, some corrected prints that have magnetic tracks.

Was "Oklahoma!" shown at the Rivoli in 65mm with 35mm sound or was it composite 70mm prints with sound?

Well, I'm just guessing - that the first release was done with separate sound, because I don't think there was time enough to get the film striped and recorded. We were delivering virtually at the last minute out of the laboratory. So they probably made other arrangements for the sound at that time. But subsequently I know that striping was done because, as I say, I have samples of some striped prints. But then again, I have to repeat myself, I sort of lost track of the whole process after that. Brian Jr. could probably give you more information about that, because he stayed with it a lot closer than I did, including, of course working with Mike Todd on "Around the World in 80 Days", which I didn't do at all. I had no further contact with Mike Todd at all.

Tell me about the early presentations and Todd-AO test films. Where did you run the tests and what projection equipment did you use?

No, I didn't see any of the films being made but I will say that the company set up a theatre in Buffalo, New York, so that it would be near the plant where a lot of the

components were being made and could be tested. We also had a half scale "theatre", so to speak, at Southbridge in our own research laboratory. We set up a half size screen. The full size screen was built in a small theatre that was no longer being used, the Regent Theatre in Buffalo. It had a full size screen, as I remember and it might have been made of plywood and painted white. It was a place where they could make demonstrations, and of course they had a facility set up in Hollywood as well, for screenings, but the experiments could be run nearby in Buffalo, rather than sending them off to Hollywood.

One other "theatre", if you could call it a "theatre", we set up was a screen-testing facility in the "powerhouse" of the American Optical Company. It was the only very large "room" that could take a 55-foot screen in the entire AO plant. And it could only be used at night, because the powerhouse had windows on all sides! Because I was responsible for developing the screen, I often had to run the Ernemann projector with test film to test the screens in that facility. Rather interesting in itself.

What would Southbridgers think when they could see films at night through the windows of the powerhouse?

They must have seen something or other "flickering away".

The old Ernemann projectors were remarkable, although they were simple compared with the Philips projector. They looked like they were made of LEGO sets. They were very simple projectors but they always ran. We also experimented with various sorts of arc lamps because, again, one of the hopes of the Todd-AO system was to get the screen very bright - because the Cinerama screen was very bright, with its 3 separate arc lamps illuminating the screen.

We made Todd-AO to have a very bright screen, based on my measurements in 1952.

Did you meet some interesting people? Todd, Rodgers and Hammerstein etc?

I had the privilege of meeting all three of them, not very often, but Mike more than the others. I was present at the very first meeting between Dr. O'Brien and Mike Todd. He flew up from New York to the Rochester Airport. We met him right at the airport, and sat in a restaurant booth as I remember. I don't know if anything was eaten at that time or if coffee was served. I'm not sure. He brought with him a person whom he had found who supposedly had some expertise in the motion picture field, but dropped out of the picture rather quickly. His name was Warren Millais¹¹ and he had helped Mike Todd get in

¹¹ I can fill you in on the subject of Warren Millais. As far as I know he never had anything to do with the motion picture industry. When I went to work for the American Newspaper Publisher's Association research laboratory in Easton Pennsylvania, Warren was working there, not as an employee, but they had given him some working space. He had convinced some of the publishers (not your average technical wizards) that he had a process whereby he could take an old black & white photograph, or even a newspaper halftone, and reproduce the colors in the original scene. He tried to explain it to me, but when he got to the point of telling me that it worked by "the wavelength attacking the density" I sort of turned off. To this day I don't

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touch with Dr. O'Brien.

He really didn't have anything to contribute after American Optical got into the picture, so I don't think I ever saw him again. But there were the four of us together at that time. I was there primarily as an observer. I mean, it was a discussion between Mike Todd and Dr. O'Brien. He tried very hard to persuade Dr. O'Brien at that time, but Dr. O'Brien was not ready to make a commitment. It took some weeks, I guess, after that, to put the deal together. But American Optical had, I thought, a wonderful opportunity here to break out of its traditional lines into something new. They had tried to enter the field of television, believe it or not, at an earlier time. Projection television, but they were ahead of their time. Now projection television is really quite common. But they were maybe 20 years ahead of their time. They had worked really hard on producing projection television.

What kind of work with the Todd-AO process continued after the premiere?

I continued working at the printing laboratory in New Jersey for about 6 months and incidentally I might just explain the reason the printing laboratory was there. The printed film had to be processed, and it was processed at the Consolidated Film Laboratories, which also was in New Jersey, just a couple of blocks away. Art Miller used to run Consolidated Film Laboratories, but he left there to take charge of the printing of "Oklahoma!". But even before it was completed, Art took a job at DuArt Laboratories in New York which is another film laboratory in downtown Manhattan. And so, towards the end of the period when "Oklahoma!" was being printed, Art was only there as an advisor, so we had to pick up the slack on that. And it was mostly Brian O'Brien, Jr. and myself who were responsible for getting the printing done. But I stayed on, as I say, working with the duplicate negative for a period of some six months, trying to get a better print than we had been able to get for the original opening. People were beginning to talk about other theatres for which prints were needed. But the whole process was cumbersome and slow and a different solution was really called for.

Did you make corrected prints for each theatre?

In principle yes, but as a practical

know if he believed in what he was doing or was a complete four-flusher. The "process" consisted of unscrewing his enlarger lens wherever it would come apart (usually near the iris) and inserting a piece of cardboard with several strange shaped holes cut in it. Each hole was covered with a different colored gelatin. When reassembled on the enlarger it produced different colored blurs on the easel. By moving these blurs around he could produce colors in a scene, like a sort of a blue in the sky and a partial green in the grass, etc.

After about a year the publishers decided he wasn't getting anywhere and kicked him out. Several months later I got a call from him asking how to get in touch with my father. He said Mike Todd wanted to contact him. Apparently he had somehow gotten together with Mike in New York. Mike was associated with Cinerama and was looking for an optics person to develop "Cinerama out of one hole". Warren had heard me talk about my father, and one thing lead to another. Mike recognized what Warren was but he kept him on the payroll for about a year. He told me it was out of gratitude for getting him together with my dad. *Brian O'Brien, Jr.*

matter, I think probably maybe only 2 or 3 different types were made. The principle difference is the angle of the projection onto the screen. I think in some cases they tip back the screen slightly anyway, but I'm not sure of that. I never saw any other installations other than the Regent in Buffalo, which I think, had a vertical screen. I don't believe it was tilted. And the Rivoli, which had a vertical screen. As I say, I basically lost track of it about when that would have been. We are talking about some time in the middle to the end of 1956.

Walter Siegmund with a piece of distortion corrected "Oklahoma!" 70mm film.

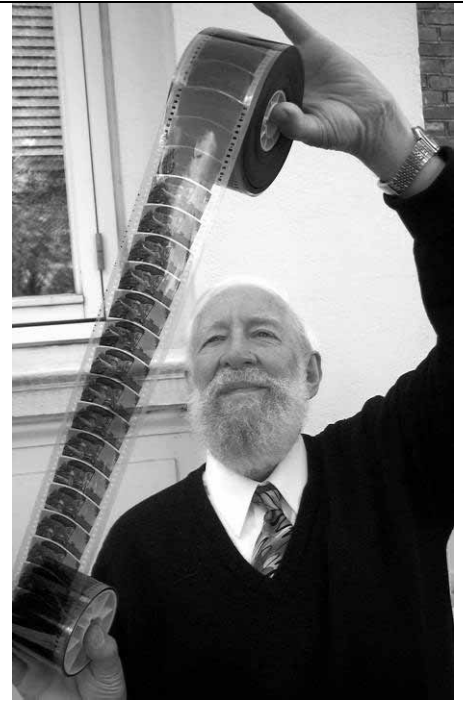
Tell me about the time [1958/59] when American Optical (under Weldon Schumacher) closed the Todd-AO activities – what happened with machines and equipment?

Well, I know that the laboratory in New Jersey was closed down earlier, because the printing machines were shipped back to Southbridge - the Mark III printing machines and the Mark II probably along with them, although it was no longer used. Immediately after the Mark III printers arrived they and the Mark II printer were put out of use. Anyway, those machines came back and they were stored for a couple of years. And then the word essentially came down, and I don't know quite who or how it came down, but it came down - to the effect that those printers were obsolete and they were never going to be used again. And like a bunch of "vultures", engineers and assistants "attacked" those machines to strip off what they thought were going to be useful components. And it was really a sacrilege to destroy those very nice pieces of engineering, just for their components! I wished at least one of them had been preserved so that it could have been put in the archives along with other old pieces of motion picture equipment. Sorry to say that it wasn't. All we have left are the pictures, but we don't have the printers. We do have a few of the corrected prints, including some that I have, and some that Thomas has. But the printers are gone. I do have a few, very few components from the printer. I wish now I had taken a box and collected a few for myself. I'm not even sure there is a complete set of drawings of those printers in existence any longer. But you do have the photographs, and Henry Cole and I can still tell you about them and perhaps also Brian Jr. The three of us can still describe what they did, and how they did it. But that may be the extent of it.

Do you recall Fred Hynes?

Yes I do, but Fred was primarily responsible for Todd-AO sound. I can say that at one time, we were in Hollywood and Los Angeles, and a group of us went to visit the Ampex Corporation, who were responsible for the sound system. The most unusual aspect for me is we had a luncheon date at a restaurant somewhere in Los Angeles, and just as we pulled up, I saw two of my neighbourhood friends from where I lived in Rochester, New York who were parking their cars at that time - I spoke with them. In that brief moment I was able to see them one more time before we separated our lives forever.

I don't remember too much about the sound aspects, except the decision to go with



6-tracks, two of which would be inboard of the perforations and 4 which would be outside the perforations. Of course, that whole concept of magnetic recording was really just getting underway at that time. I mean, I'm not sure how long that had been tried, but it was the obvious thing to do at that stage of development of Todd-AO, that is to go with magnetic sound.

I was not very much involved in any of the sound work but obviously it had to be coordinated. I remember his [Hynes] being a very, very agreeable person.

A person who was more of a problem for us was, from a point of view - what should I call it - a conflict between the real Hollywood expertise and our own almost lack of expertise - was Skip Sandford, the cinematographer. He rightfully, I have to say, identified the printing process as being a problem. A *real* problem, and he was concerned about it. And we had a demonstration at one point, and he said - "There surely has to be another way to do this"?

It turns out to be he was absolutely right, but we hadn't determined what that alternative should have been! I look back now on that particular incident very poignantly, because I realised that he said something which should have been the beginning of at least some re-examination of the whole issue of how to correct the picture for the screen. But we didn't do it at that point. We kept a narrow focus on the printing machines, and it was not a total success although. It might have been perfected at some point.

It was a lot to do in a short time. The window of opportunity for Todd-AO was also very limited, you know. If we had come a year later, by that time it probably would have been just lost in the "scuffle" of all the different processes that were being done at that time.

Did you attend the first demonstration in Hollywood of the Todd-AO process for the press?

I don't think so. But I saw some more limited demonstrations when I was in Hollywood briefly in 1954. It turns out that

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year both The Optical Society of America and the Society of Motion Picture and Television Engineers were meeting on consecutive weeks. I was able to go out there for both meetings and during that time I think I saw some demonstrations - I mean some shots in the screening room at MGM which was the studio used for the production of "Oklahoma!" But it is a bit vague in my mind. The only impression I got at that time was that, probably, the most comfortable seats in any theatre I ever sat in were in that screening room (big laugh) at MGM, and not surprisingly. No, I don't think I saw it for the press. I think it was only for a group of us privately.

You mentioned you called Dr. O'Brien and said "wow" about your first impression of the Cinerama process. When Todd-AO was finished and it was delivered to big screen, did it live up to your expectations considering you used the contact print and not the distortion corrected print? Was it "The perfect show in Todd-AO" basically?

(Long pause) We were so engrossed in trying to solve the problem of the corrected print that I think it was hard to become disassociated with that. We were working with a difficult process without the experience of the whole business. We ran into a problem, which we didn't anticipate which was very, very worrisome. We found the master negative, which cost 7 million dollars to make as a film, had in fact been cut in the usual traditional way in Hollywood and was covered with scratches. That makes no difference in the world in a contact print, because the scratches are wiped out by the optical diffusion of that [printing] process. But when we made *our* projection print, every single scratch showed. It was suddenly a disaster, and we had to, very hurriedly, have a machine designed to coat the negative with a layer of lacquer to try to hide those scratches and that wasn't completely successful even then. So, we were wrapped up in this kind of crisis of getting the film lacquered and then printed and so forth working against the deadline. I don't think we actually were psychologically attuned to the idea of being able to step back and say - "Now, what do we think of this whole thing?"

Those of us who were involved in the printing were, of course, and I speak for myself only, were very, very, uhh (big sigh), *exasperated* by the limitations that had been imposed on the whole effort. I told you about the scene of Aunt Eller that was off by "forty magenta" or something like that. I mean, what a horrible thing this was to see in the Rivoli Theatre, which had been completely rebuilt to produce the *perfect* projection situation. And there it was, you know. It was *our* fault; we had made a serious mistake. And there were all these cosmetic defects, too. Now, did the whole film have any impact for us anyway? I think we had seen it SO many times in making the various prints, trying to get a good print, that it was highly "diluted" by that time. On the other hand, when I saw "Around the World in 80 Days", which I hadn't seen anything of before, I was very much impressed. "Around the World in 80 Days" was a masterpiece of filmmaking, I feel. Both in the humour that was involved, and it was also technologically very good. It was as good as the process could be. It was projected in the Rivoli Theatre

from the *lower* booth and it was a magnificent presentation. Everything clicked on the presentation of "Around the World in 80 Days". And then, I think Mike Todd's innovation of using all those cameo actors and then putting all the titles at the end was also a masterpiece. The man obviously had an incredible imagination and was willing to break with the traditional Hollywood very effectively. He must have walked away saying "I *really* showed them how it must be done, I really showed them"! But I never saw him at that time, so I don't know what he *might* have said - but it was a great success, no question about it. I saw some other Todd-AO films too, but I can't tell you which. Wasn't "Porgy and Bess" done in Todd-AO? I think it was. I saw that in Baltimore and it was very good.

After all these years, thinking back at that period of your life, how would you describe it?

It was the most exciting time, and it was exciting for a number of reasons. First of all, I told you the one thing I wanted to be when I was 25 years old was to be an optical engineer in the film industry. And here, I had an opportunity to do exactly that! And I mean it was such a wonderful fulfillment. But I didn't want to be associated with something that didn't come out quite right. But that is how it worked out. Still it was exciting, and when I talk to both Brian [O'Brien, Jr.] and Henry Cole who were there along with me, the three of us all agree it was the most exciting times of our lives. And it was because of the pace, and the people, the impact we could have made. The fact that we were dealing with something which was show business - as against something in the laboratory - that might emerge eventually. We were dealing with show business and, speaking personally, I was very, very interested in motion pictures anyway. I loved going to the movies, and this was the ultimate movie.

And what is it like speaking about it 50 years later?

Oh it's fun, I enjoy it. And I may not tell the same story every time, but it's pretty much the same. Let's say I was disappointed because it lacked the nice touch of perfection, where you can walk away and say we were totally proud of what we had accomplished. I wished we could have said that - and we came close, came close.

And it had an impact. I mean, it did affect motion pictures to some degree. But it was such a marvellous opportunity and we fell a little short, and that has always bothered me all these years. Maybe that is unfortunate to record, but I tell you the truth that is how I feel about this, and yet it was a *wonderful* time, a wonderful time.

Those were my questions; do you wish to add anything?

Well, I think I would add this, Thomas, and that is, it was incredible to me to find someone like yourself - who has as much interest in this as you have - and I am glad to be able to work with you and give you some of my personal recollections, my personal artifacts, that I saved from the process. And for you to bring me back to that period in the discussion we have had, the one we have just completed.

No, I enjoy talking about it, I just wish I could say, - "It was a total 100 % success

and it made millions of dollars" which people look for these days.

But it may well be that the people who make wide film pictures now - and I don't know if they make it in Panavision or other things... Certainly IMAX was just another order of magnitude more demanding than Todd-AO, but basically solved the same problems in their own way all over again. A big print film for high image quality, and lots and lots of light and nice wide angles...

All the same philosophy was there, they just took it to another degree and were successful. But motion pictures, I think, in 1955, or maybe in 1952 I might say, motion pictures could have gone completely out of business. Theatres were closing at a tremendous rate. It was almost a dead issue with television coming in. But Mike Todd saw the opportunity with his friends with Cinerama and brought movies back to life.

And today it's still a tremendous, big booming industry. The number of pictures still being made today is just unbelievable. We see that when we go to video stores! Anyway, those were my comments.

Transcribed from audiotape and DVD between August 2003 and May 28, 2004.

Interview reviews:

"I am very pleased with the interview. Its original research, really, and it will be a great plus for the [in70mm.com] site when done".

Paul Rayton, chief projectionist
Egyptian Theatre, Hollywood, USA

"The interview with Walter is superb."

Brian O'Brien, Jr., CT, USA

"This is a most informative interview, possibly the best, most lucid one I've ever read from anyone involved in any of the landmark widescreen systems. It is especially valuable since much of what was published about those early systems was so full of bogus publicity information".

Martin Hart, curator,
widescreenmuseum.com, Texas, USA

You have done a valuable piece of research.

John Belton, Film historian, New York, USA

It is an excellent interview.

Dan Sherlock, Film formats expert,
Brea, USA

I enjoyed reading the Sigmund piece; it was very interesting and informative.

Dan Leimeter, chief projectionist
Todd-AO (retired), Arizona, USA

Thomas' infectious enthusiasm and skill at asking the right questions helped him [Walt Siegmund] to remember the time 50 years ago when at the American optical Company he joined the team assembled by Dr. Brien O'Brien to create the Todd-AO process.

Thomas's interviews are invaluable...
Grant Lobban, film historian, London, England

...it and it's terrific, a wealth of information that will be useful to me.

Rick Mitchell, film historian, Los Angeles, USA



Working for Mike Todd and a little bit of Cinemiracle too

By: Glenda Jensen, New Mexico, USA

I arrived in New York City aboard the Cunard liner Queen Mary on January 4 1957. Went to work for lace company. Left that position in about 3 months and went to work at United Artists for Guy Biondi, Mike's Advertising Manager.

UA was the distribution company for "Around the World in 80 Days". The office was very small and crowded. Two desks were placed nose-to-nose. There were no windows and it was isolated from the main Todd office which was a few floors down in the building at 729 7th Avenue NYC at 49th Street. My memory is that there was no 13th floor. We might have been on the 10th floor. I know that NBC and the Steve Allen Tonight Show had 12th floor. The actual floor for Todd offices sticks with me as 7th.

Top: Glenda Jensen, January 2005.
Right: Glenda in Mike Todd's office.

We moved downstairs within a few weeks where the main change was that the office was much much larger and it had an outside window. The two desks were again head to head (Guy and I faced each other) up against one wall of the office. The other wall was lined with 4 drawer file cabinets containing the stills from the production and the correspondence with the U.S. theatre owners. At this time [May 1957] about 5 cities were operating the hard ticket showings. My task was as Secretary to Guy Biondi to answer his phone calls and then inform him of the caller plus type and file his correspondence. No one answered their own phones in those days. On a weekly basis I

also typed out forms and mailed them out to each of the theatres confirming the amounts that had been agreed to be split by Todd and the theatre owner for the showings in those cities. When the theatre wished to be reimbursed for the advertising expenditure he would send in the billing from the newspaper, etc. as well as the tear sheets showing the ads that had been placed. I don't remember where they went and what happened to them after they had been reviewed. My experiences of my later life prompts the question as to whether the theatres were approved to deduct these costs from the percentage of the gross to be received by Todd. It's a guess.

During my first months "Around the World in 80 Days" was opening in theatres across the country. Very slowly. Each opening was a big event since it was being promoted as the first hard ticket movie and was marketed as a theatrical presentation. As many openings



as possible featured a tethered gas balloon handled by the Balloon Club of America. The pilot Francis Shields lived in Pennsylvania and would contact us regularly to set up his schedule for openings. Whatever the gas was, hydrogen or helium, I know it was very difficult to get one of them. Guy spent many hours locating sources convenient to the cities of the opening. Also one was very expensive to acquire. Field men/women were out setting up the press coverage and promotions for each grand opening. They were given their budgets and were required to send in their expense account reimbursement requests each week.

We had a couple who were very recalcitrant and rarely sent them in weekly...generally in a bunch. Thus frustrating Guy. The field men/women called regularly...often daily...to report progress and get any further instructions. Due to the hard ticket feature of this movie showing Group Sales were very important. Mary Michael Pollock was the Group Sales Representative for the Todd Company and she traveled throughout the states setting up groups...she was very successful. Guy had a brilliant idea of promoting the use of a white Cadillac which would pull a small booth to be used to sell tickets to the Rivoli Theatre in NYC where "Around the World in 80 Days" was showing. Guy got an aspiring actor to drive the car into New Jersey on specific days but it was very difficult to keep track of the driver. His name was Seymour Cassell (now a well known motion picture actor) and often I was asked by Guy to, 'Find Seymour Cassell that son-of-a-bitch'. I got to hear the last name as one whole word. SOB was one of Guy's favourite phrases.

Mike Todd's Staff

Names of field men that I can remember are Seymour Freedman in Baltimore/Washington, DC area; Marshall Migatz in Canada; Leo Zabelin in Chicago; Hanns Kolmar in Los Angeles; Van Wolf elsewhere.

Working out of the main office was Seymour Krawitz the Publicity person who worked directly for Bill Doll who was Mike's longtime friend and part time p/r representative.

Re Bill Doll. He had a desk outside my office and one day during a particularly hectic period his phone rang. Mike happened to be passing by. He grabbed the phone and responded "Bill Doll's phone...this is his assistant Mike Todd". I remember how much I loved it. The phone caller must have gotten very flustered because I remember Mike saying... "Hello, hello, hello." I wonder who it was.

Bill and Mike used to have disagreements because Mike wanted Bill to concentrate on his, Mike's, business but Bill didn't want to give up another account he had and David Merrick the famous Broadway theatrical producer wanted him to handle Merrick's p/r exclusively. I wasn't privy to the resolution of this but I know that Bill never did get to spend any greater amount of time in the Todd office.

Midori Tsuji was a fascinating and beautiful woman. I was in awe of her. She was a person very much in command of herself. She took care of everything for Mike and, occasionally, for Elizabeth. I wanted to be like her. She was funny but yet efficient. She worked closely with Doris Kruse who was Michael Jr.'s secretary. Sadly, when I stopped by the Todd office on a visit to Manhattan in 1966, I learned that Doris had died of a domestic accident. I was quite friendly with Doris and often, after work, we would stop in the restaurant downstairs for a bite to eat before we made our way home for the day. I know she had been in Hollywood as a very young woman. She had gone there from somewhere in the Midwest after being named 'Miss something or other' hoping to make it big in the movies. She was always rather

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bitter that she wasn't able to make it.

Employees in the main office were about 15. Most of the others worked either on the West Coast or in the field. There was a lot of coming and going by the employees and very few had a desk. They just checked in regularly. For instance: Ira Mangel who also fascinated me but whose job I never really knew. I think he was in charge of group sales for NYC. He did eventually work for Louis Armstrong as his publicity representative until Armstrong died so I assume he was affiliated with Bill Doll. Herman Odell was Mike's righthand man and seemed to be a legal advisor. He seemed to always be in Mike's office when Mike was in town. Morris Lefko was the chief accountant.

Jordan Ramin worked off site in a shipping office in charge of shipping the one-sheets up to 24-sheets and advertising cards for each theatre showing "**Around the World in 80 Days**". The 24 sheets also were used for major promotional events and the one-sheets were often donated to schools for their fundraising. In his department was Steve Figueroa a young Puerto Rican, I think, who often came by Guy's office to pick up instructions for shipments to the theatres. Also working in the shipping department was Raymond St. Jacques who became quite famous in the motion picture business with many major roles. When Steve didn't come, Raymond did.

Bill Boettcher was the wizard who seemed to be in charge of any of the mechanical problems, or film problems, connected with the showing of "**Around the World in 80 Days**" anywhere in the US. Harold Roth was, I understand, the contact between the theatres and the Todd Office.

Mike Todd Office Departments

There was bookkeeping; advertising; publicity; legal; group sales; general office. The receptionist answered the phone. She had one of those plug-in telephone boards. Mike had a tie-line direct to his apartment in Manhattan (before he moved to Westport after the birth of Liza) making him very much a part of the office operation.

Madison Square Garden

The opening of "**Around the World in 80 Days**" in London and the use of Battersea Amusement Park was such a fabulous success that Mike decided he would host the movie's First Birthday Party which would be held at Madison Square Garden on October 17 1957. Guy was responsible for arranging the advertising and promotion of the selection of a couple of people from each of the cities then showing the movie and having them come to NY for the party. By this time

the number of theatres had increased. They would be selected (I don't remember how) and flown to NYC, taken to a hotel and then taken to the Birthday Party at the Garden. I was mostly on the edges of the promotion and advertising but on the day before the party I was asked if I would be willing to deliver the necessary tickets to each of the hotels at which the couples were staying. The day was very long and it was dark by the time I went on my deliveries. I felt very proud to be entrusted with the task.

The next day was a usual day at the



office...very busy indeed... Midori had suggested we each take a room at the Taft Hotel (\$12 I believe), which was almost next door, in which to get washed and changed into our fancy outfits because we, too, were guests at the party.

What an evening it was. I was starstruck and overwhelmed with the glitter and glamour of the people and events going on. A young woman, daughter of a coal miner, from Eastwood, Nottingham, England mingling with the greats and not-so-greats of Hollywood and Broadway. The office had been swamped by phone calls from 'stars' who wanted to be a part of the affair. One major British actor had begged to get a ticket but for some reason Mike adamantly said, 'No'. The actor got one from somewhere and did attend. Dancing was to the music (live) of Duke Ellington; in the Pageant from India Sir Cedric Hardwicke clung on for dear life in the howdah on the elephant; Emmett Kelly sweeping up the spotlight; Fernandel; and lots more. Phew. I left the Garden late, went to the Taft Hotel and checked out...I have no idea of why I did that...and took the subway back to my home in Forest Hills. Exhausted I

slept like a top and didn't wake until 9am. Grabbing my work clothes from the day before I scurried off to work and ran into the reception area. Everyone there said...'Get down to the pier the boat is waiting for you'. I didn't know there was to be a trip around Manhattan Island. Mike had chartered the tour boat for the day to entertain the world press who had attended the party. I took a cab to the pier and sure enough they were holding the gangplank for me!!! On board the boat was a fully catered brunch and the people were the greats. However, I spent most of my

time wandering around looking at the scenery, nibbling the scrambled eggs, watching the papparazzi of those days taking pictures of Liz, Michael, Mike, Fernandel etc. etc.. What a great promotion it was. When the boat returned to the pier there were crates and crates of large bottles of Dom Perignon champagne, one bottle for each of the invited guests.

The day of the boat tour was cloudy but dry. I believe it was a great success in emphasizing the mythic images of Liz and Mike. To this day I have no idea why they held the boat for me...many employees remained back in the office. Sadly I didn't get my picture taken on that trip. I looked at all the contact prints of the pictures taken by Dick Williams but I didn't appear. However, I have my memories.

Life returned to normal...if you can call life at the Todd Company normal. The party was in October [1957] and "**Around the World in 80 Days**" was opening across the country more quickly as the time passed but still as a hard ticket operation. Still 'no popcorn' sold during the showing. Mike thought food was distracting from the film as well as the fact that he hated the smell of the butter sauce.

Every day telegrams would arrive from each of the theatres. They would be in code which, when transcribed, gave the gross of the previous day's showings. The advertising department kept track of the daily grosses and they were

compared to the grosses of "Gone With the Wind". After the figures were recorded I don't know where they went to be reviewed, etc..

We had many visitors to the office usually theatre owners from around the country would come in to negotiate some financial deals. I particularly remember Ted Mann from Minneapolis who eventually owned the Graumann's Chinese Theatre in Hollywood. He was a jovial person with a florid face and was very personable...to me the lowly office worker. Also an owner from Montreal, Canada whose last name was Berlin. He too was a very pleasing person.

Georgie Jessell was a very close friend of Mike's and he would often stop by to visit when Mike was in town. Also Eddie Fisher could be bumped into in the corridors when he was visiting. Needless to say that we had large numbers of individuals coming by during the planning of the Birthday party most of whom were very well known in the theatrical world...I wasn't aware of who 'they' were. I just knew they were important.

...and I remember it clearly today



Michael Todd around 1956. "The New Todd" after his jaw operation and new hair cut.

On the day of Mike's death [22 March 1958] I had gone to the beauty salon to get 'done' ready for the event the following day. When I returned home my roommate took me to a couch and told me to sit down. She then broke the news that Mike had been killed in the plane crash. It was as if a giant hole had occurred in my life...and I remember it clearly today.

As an aside...I worked for 14 years for a man who was very similar both in stature, personality and outlook to Mike. His name was Ben Abruzzo. He was a residential developer here in Albuquerque who also flew hot air balloons for recreation. He won lots of balloon races and decided to take it to the next level. I was then the Corporate Secretary and he included me in a lot of his planning. He and 2 crew became the first team to fly a gas balloon across the Atlantic from Massachusetts to France. He and his team then became the first to fly a gas balloon across the Pacific from Japan to Northern California. Ben was killed in the mid-80's in a plane crash here in Albuquerque. This brought back lots of memories of Mike and his death. Balloons appeared in the lives of both of these men and, of course, in mine.

Showing how small this world is, a couple of years ago I received a call from the co-op gallery of which I am a member. The artist was new in the gallery and was reading the bios of the other members. He asked about the fact that my bio mentioned Mike Todd and that I had worked for him. George Hight, the artist, had spent his life as a photographer in Gallup, New Mexico and being a stringer for the local newspaper received a call about a plane crash near

Grants. He was told to get out there as fast as possible because the snow was causing problems and the police needed a photographer. He got there and was the first person to see Mike after his death. George moved a piece of the aircraft and it revealed Mike. He took the accident photos. It gives me goosebumps. George is still a member of our gallery and is known for his miniature oil paintings of the churches of New Mexico.

During the weeks before his death Mike had been looking at scripts for his next production. He came up with one about a real life bus driver who had taken a bus and, hijacked? it to Florida. It had the working title "Busman's Holiday". The script was

airmailed to California for work. It never arrived in California and several months later, a box arrived at the Todd office containing a package of script pages, burned around the edges and water stained. The script had been on a flight that had gone down and burned outside Chicago. Michael Jr. had continued looking for a new script and nothing was further done on 'Holiday'.

Michael Jr. had continued Mike's fascination with smells and films. Hans Laube who was Swiss, began showing up in the office for meetings with Michael and eventually we found out that a new movie was in the works. It was to feature smells and since Scent-O-Vision! was taken Michael took the leap and named the new process Smell-O-Vision. The scriptwriters Bill and Kelly Roos became regulars for meetings. "Scent of Mystery" came into being. The locations were to be in Southern Spain. Ira Mangel went on the location as well as the rest of the head staff. I tried to get my favorite actor Tony Britton the lead role but Denholm Elliott won out.

In the search for the female lead, Guy Biondi came into the office one day to tell us how he'd followed this gorgeous young woman who was walking down Broadway. She went into a building and he followed her into the elevator. Asked her if she was an actress, she said 'yes', he gave her his card and asked her to call him. Well she called and came in to audition for Michael. She didn't make it but later on she became famous as Elly Mae on "The Beverly Hillbillies". Her name was Donna Douglas.

Our office became quiet and sparsely populated when the film began shooting. We kept in touch, hearing from them regularly. One particular event I was involved in was looking for a match to the tie worn by Denholm Elliott in the earlier shots in the film.

It seems, that there was no duplicate tie on the set and they needed to reshoot some scene. My task was to take a clipped piece of the tie around all the men's clothiers in Manhattan...Brookes Brothers, etc... hoping for a match. No luck. It seems that ties were made from ends of fabrics and it was rare to be able to match a tie of the quality Elliott was wearing. I pounded a lot of the NY pavements on that one.

The rest of the time of the shoot was quite uneventful. No more panic shopping trips just regular everyday work. "Around the World in 80 Days" was still out in the hinterlands and still hard ticket.

"Scent of Mystery" opened on Thursday February 18, 1960 at the Warner Theatre, Broadway and 47th Street with black tie optional. Dick Williams decided to do a press event by getting the car taking Elizabeth Taylor to the opening, to 'break down' on Broadway about 1½ blocks from the front of the theatre thus causing a traffic jam and Elizabeth would have to walk the remaining distance to the theatre giving photographers and reporters lots of opportunities for shots and stories. It didn't quite work out that way even though the photographers were prepared to take lots of pictures. I seem to have a memory of the car stopping but then making it the rest of the way. I have a vague memory that it may have been raining lightly. Dick was disappointed. The premiere of "Scent of Mystery" garnered mixed reviews. It had been eclipsed by a Walter Reade production that had premiered a month or so earlier and I believe that process was called ScentaVision.

The smells became a bit of a problem. It seemed to be that the theatrical ventilating systems didn't clear out one smell before the next one came up. It wasn't a tremendous problem but it did cause a lot of furious work by Laube and others. When the premiere took place in Chicago I was able to go along to carry some things and help when there. The opening was in the Cinestage which had been renamed Todd Cinestage. "Around the World in 80 Days" was no longer showing there. Herman Odell, Michael Jr. and Hans Laube stood at the back of the auditorium intercepting the employees as they left after the show (or during intermission) to get their feedback. I too had noticed the carryover effect and, not realizing that they were aware of it, gave them that tidbit.

My memory of the rest of the "Scent of Mystery" story is very vague. I don't believe there was a lot of notice taken of it by the press and it slowly slid from sight.

After this, the company began to release some of the staff. Because of the advertising for "Around the World in 80 Days" still running, Guy and I remained there for longer than others. But the time arrived and I left.

"Windjammer" in CineMiracle

Guy got me a job with Van Wolf, who had previously been a field man for us, working on the distribution of "Windjammer" which was in CineMiracle.

Van Wolf needed a secretary/girl friday to work with him on the release of "Windjammer". He contacted Guy Biondi who very graciously recommended me to him. Due to the lack of business for "Scent of Mystery"

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my time with the Michael Todd Company was coming to an end and I would very soon be looking for new employment.

Van and I visited (we knew each other from Van's time as an advance man for the Todd Company) and we came to an agreement. I had one requirement...that I didn't have to punch in on a time clock as did the other employees at the distribution company. I hated having to be there by a certain time and it was my belief that if I was arriving at almost 9 o'clock and leaving whenever my work was done after 5pm then both of us were fair with each other. It worked and it was a very satisfactory arrangement.

The office, at that time, was in a 100 story office building at Columbus Circle which is at 59th and Broadway. Later on Van and I moved to an office in the CBS building at 53rd and 5th.

Right: Mike Todd and Mike Todd Jr. with the suitcase from "Around the World in 80 Days"

The distribution company for "Windjammer" had a name that I'm afraid I can't remember. I know it ran a television station in New York City and by presenting a lot of live plays was considered more highbrow than the usual commercial tv stations.

Being the fan of actors and movies that I was, I thoroughly enjoyed the fact that Marian Dougherty's office was a few doors away from us so there was a constant parade of 'known' actors coming through the offices. Marian Dougherty is/was the famed casting agent for both tv and movies.

Again, I was working after the production had been completed and it was being shown in limited release across the US. The three-projector process was very complicated and the press agents were able to generate a lot of newspaper space in explaining how it worked. I never did see the movie...I think the film had not yet opened in New York ["Windjammer" opened 9 April 1958 at the Roxy, ed] ...but I can't be sure.

My work consisted of dealing with the media who would call for clarification of the releases as well as asking for clips of the movie to use at the tv stations etc. Regarding the clips I would contact the Los Angeles office by twix machine and have them send the clips to the station. Twix machines were like giant manual typewriters that communicated via the telephone line. The keyboard was laid down in alphabetical order causing typing letters or requests to take longer than would be the case by regular typewriter. I liked the idea that I was in 'touch' with the West Coast while typing. I expect it's the feeling that people got when the first cell

phones came out using text messaging.

I also did the correspondence dictated to me by Van Wolf...I had training in Gregg shorthand...and I remember it was a very busy office but I'm afraid I don't recall all the details of my job. I did have one task that was thoroughly enjoyable. I had to escort the three young Norwegian [Harald Tusberg, Sven Erik



Libæk & Kaare Terland, ed] men from the movie to perform in a show copied from "American Bandstand".

"American Bandstand" was a groundbreaker in the US. It was broadcast from Philadelphia and featured the up and coming rock and roll singers of the day...along with some well known singers...and was created by Dick Clark. The teenagers were part of the show and would show off their dancing skills while the singers were performing. It was a phenomenal success becoming the biggest teen tv show in the US. Due to its success, a local New York TV station decided to make their own show which was broadcast from Palisades Park in New Jersey. Palisades Park was an amusement park with the dubious distinction of being the location of the popular music program for teenagers. The young men were to perform their rock and roll music. Later on I heard that one of the young men [Sven Erik Libæk] had become a very popular music host in Australia. I remember taking the boys (young men) to New Jersey but I remember practically nothing about the trip.

There weren't many people working on "Windjammer" in the NY office. The field men didn't come into town. However there was one individual who visited regularly...Steve Kesten who seemed to be the press agent for NY area. I believe he became a motion picture producer but I have no additional knowledge of him.

I got married in September of 1960 and I'm afraid I must have been very distracted from my job. I continued to work there through, I think, April of 1961 when I left because I was pregnant delivering my baby in late June of that year. I remember that NYC experienced a huge snowfall that winter but as I lived closed to the subway station in

Forest Hills it wasn't difficult to get from Queens to Manhattan and I showed up at the office when none else did. I think I made Van feel guilty because when the same thing happened the next week I decided not to try to get to work...the sidewalks were very icy and I was pregnant...but, of course, Van arrived and wondered where I was! Sadly, Van died in the late 1960's of a long illness.

I worked there for about 18 months until I married. Then the rest of my life began.

My Years Working for Todd-AO Studios

By Dan Leimeter, Arizona, USA

Todd-AO had been in business for over twenty years when I started to work there in 1977. Michael Todd's original idea had been to excite the theatrical audience with a huge spectacle: big color picture, big stereo sound, all coming out of one machine during presentation. 70mm film provided the vast image up on the screen, and six tracks of high-fidelity magnetic sound surrounding the audience made it seem like they were in the picture.

The camera department provided the technology for the visuals, and the sound department at the studios at 1021 North Seward provided the accompanying audio.

In the Projection Department at 1021, we kept the big picture up on the screen so the mixers at the console could match the sound image the audience would hear to the visual image the audience would see. We had three mixing stages then: Studio A was the big six-track room where the major features were done, Stage B was a mono room where we did television shows and commercials, and Stage C was an Automatic Dialog Replacement [ADR] room where actors came in to re-do their lines when the production dialog recorded on the set was not usable. When C was not being used for ADR we mixed commercials; dead stage time does not pay the bills.

For those few who may be interested, Stage A booth had the two prototype DP-70 projectors (the third prototype DP-70 was in the American Optical headquarters on the East Coast, but that's another story) with Peerless Hi-Can revolving positive carbon condenser arc lamps. These machines were originally used for mixing as well as playback, but in 1968 the industry developed the "punch-in" record technology which allowed the system to back up at any point, roll forward and punch into record on the fly, rather than going back to the head for each pass. The prototypes had curved gates and could not run in reverse, so to accommodate back-up, a Symplex XL with a Hughes Xenon lamp house was installed next to the two DP-70s in the A booth.

Stage B booth had one Simplex XL and one Century 35mm projectors, each with Peerless Magnarc Type F carbon arc lamphouses. Studio C had two Century's with Peerless lamphouses. These machines were used for mixing as well as playback. The

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mixers at the console on stage had control of the entire system: the recorder, the projector, and a bank of sound reproducers. When they would reverse the system, the projectionist



About a year after I started, the company switched over to the High-Speed Shuttle system. Earlier, everything travelled at sync speed, 24 frames per second, but with the new system everything--recorder, reproducer and projector--could whizz forward or backward at up to ten times sync speed. It was great, you could work on a particular piece of dialog or sound effect and then high-speed back to the head of the section and run it over again.

Of course, film splices which travelled easily through the projector at normal speed would buckle or hinge at high speed and, in the twinkling of an eye, you would be at the splicer on the bench repairing damaged film while the mixer called out on the intercom "Are we ready yet? What is taking so long? God Damn It To Hell; We're Losing The Light Down Here!" Unfortunately, continued stress over time does not really build one's character, no matter what they say, it merely provides one with grey hair and a cranky disposition.

Dan Leimeter next to the prototype DP70 at Todd-AO Stage A in 2003. Photo: Paul Rayton

Modernizing and Upgrading

I became Chief Projectionist at TAO in 1981, and a few years later the Naify family sold their immense

holdings in the United Artists Theatre Circuit, and redirected the cash into modernizing and expanding Todd-AO. First we added two more six-track recorders to Stage A, so that we could keep multi-track dialog, music, and effects separate to facilitate changes right up to the final print master.

Dolby stereo-optical technology was making it economical for many more films to be made in stereo at that time so we gutted Stage B and made it into a first-class four-track mixing studio and a four-and-six-track playback room for checking 35mm and 70mm stereo release prints, taking some of the pressure off of Stage A. I designed a deeply curved screen for stage B, wrapped around a tubular frame, so that it just floated in space filling the entire wall of the stage. I made the curve radius 80% of the projection throw to concentrate the reflected light on the mixers and the directors seats, where it was most wanted. I designed the double-glazed projection ports with a 15 degree angle on each piece of coated glass to redirect the internal reflection (normally seen as a ghost image during credit crawls) up off the screen and onto the matte-black ceiling.

Joe Kelly, the Vice-President of Projection and Sound at United Artists Theatre Circuit and a truly fine man, had a pair of dual-motor DP-70s in his warehouse and offered them to me for Studio B. I tore them apart and rebuilt them with all new

bearings, springs, sleeves, and gaskets. I added a switch inline with the framing lights, and motorized the take-up spindles so we could wind onto 3" plastic cores and send the prints tails out to the labs for final assembly onto shipping reels. We checked a lot of 70mm release prints in that room once we got it built.

We rebuilt Stage C into a four-track mixing facility with provisions for ADR and Foley as well. Ultimately it, too, got a wall-to-wall deeply curved screen. We tore out the Century projectors and installed a hi-speed Magnatech 636 in their place, using the remaining space to slide the ADR booth back into half of the old projection booth space, which left room to install a three-mixer console in place of the old single-mixer board. And a good time was had by all.

When I first came to Todd-AO we were still using the old Bausch & Lomb and Kollmorgan lenses from the 1950's; compared to the ISCO Ultra-Star series, they were Coke bottles. You could focus in the center and the sides would be out; you could really see how bad it was if the end credits went out to the side masking. So, I was very fortunate that the new lens technology was there at my disposal when I became Chief Projectionist and could spec out the good stuff.

The prevailing feeling at TAO in the late '70s was that we were a sound house, the money gets spent on audio gear and screw the picture - so long as we could see lip sync we were in business. Luckily I knew Glenn Berggren, and he knew Isco lenses, so I was able to convince my bosses (Clay Davis, head of engineering, and Fred Hynes, head of the studio; two of the finest gentlemen I have ever had the pleasure to know) that it was in their best interest to invest in the best lenses money could buy. When your picture looks good, you look good.

Also, Dick Vetter showed me that it was better to use a longer focal length lens with a beam spreader than to use the focal length lens one would usually use to fill the screen. For instance, if you need an effective focal length lens of 50mm to fill your screen, it's much better to use an 80mm or an 85mm prime lens with a Magna-com attachment up front because it draws the first or prime lens element further away from the film plane. Therefore any movement of the film out of the film plane (such as from buckling or embossing) will be a much smaller percentage of the distance from the film plane to the prime element, and your image on the screen will stay in focus a lot more than if you used a 50mm lens which sat much closer to the film plane. When your picture looks good, you look good. That's how I got that "Mr. In-Focus" appellation on the poster. Of course, that and \$3.75 will get you a cup of coffee at Starbucks. Or, as the philosopher would say: "You know, "if we had some eggs we could have some bacon and eggs, if we had some bacon."

Expanding the Activities

In 1982, or was it '84, we acquired the Glen Glenn facilities to expand more into the TV market. That gave us stages in the 900 building on North Seward Street, as well as stages at the CBS lot in Studio City. We poured a lot of money into revamping the stages at 900 [North Seward Street], making

could shut down the lamp, reach in and retrim the carbons, and restrike the arc before the system went forward again. Most of the time you made it, but on short turnarounds sometimes you didn't, and the mixers would fill the intercom with obscenities (especially if the client was out of the room).

Glamour of Hollywood

Working in the projection booth and in the Machine Room where the recorder and reproducers were located was fun, but it was not what one could associate with the "Glamour of Hollywood". The pay was good, and the coffee was hot, but the hours were long and once you've seen a particular ten-minute reel of film over and over for hours on end it gets a bit boring.

One of my well-meaning relatives once said: "Your job must be such fun; you get to watch movies all day long." I could only smile and shrug, and say that it beat working for a living. What was difficult was the eight-hour-turn-arounds; you would start at 8:00 in the morning and work until midnight. Day after day after bleeding day. These usually happened near the end of a show, the last couple of weeks when you were fighting a deadline: "The film goes to the lab next week and they just re-shot the music for the entire show!" The overtime pay was good, but it was hard on people with families.

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them more efficient and user-friendly, and completely redesigned stages R, S, T, and the Scoring stage at CBS, adding a video transfer room in the process.

When the Skywalker South studios in Santa Monica came on the market they quickly became Todd-AO West, and some of our mixers moved over there to be closer to their homes on the west side. We completely remodelled the older stages in the complex on Bundy, and redid Stage 3 in the newer building on Olympic.

TransAudio Studios in Manhattan soon came on board as Todd-AO East, and Hollywood Video on Sunset Blvd. was quickly added to the family. An editorial house in Atlanta and a video house in Santa Monica also were added. In 1997 or thereabouts Sound One in midtown Manhattan joined the Todd-AO family of companies. With that acquisition, TAO held both of

the major motion picture sound mixing facilities in New York. If there was a big film mixing on the east coast, Todd helped in its creation.

Compact Distribution Print

In addition to our usual studio duties, a small group of us (Clay Davis, Bob Weitz, and myself) were asked to work directly for Salah Hassanein, the Chairman and CEO [Chief Executive Officer] of Todd-AO, along with Dick Vetter and Darryl Grey of Todd-AO Camera and Bob Pinkston of UATC to develop the Compact Distribution Print. Everyone dedicated themselves to the project, and we honed the concept and refined the technology and we made it work splendidly. We were in the final stages of demonstrations to the industry when our major stockholder passed away.

In 1999, Marshall Naify died. Marshall was the head of the family that had owned controlling interest in Todd-AO since the 1950's, and when he passed away his family was eager to cash in their tremendous assets in the profitable company that was a leader in it's field.

The project was mothballed and put into UATC vaults, while the Naify family looked for a buyer.

Killing the Golden Goose

At just that time [1999], Liberty Media (a much larger fish in the financial food chain) came along looking to establish a beachhead in what they saw as the cash cow of the future - interactive television. Todd-AO had sound mixing facilities for film and television, as well

as video imaging and editorial companies

under it's belt, so they up and bought it. Then they purchased other, smaller, media companies in the Hollywood area in order to control as much of the market as they could get.

Interactive television was an idea way ahead of it's time, and the bonehead who championed the concept left Liberty under a cloud long before I had to retire.

When I retired about a year and a half ago [August 2003, ed], the Todd-AO name was as dead as Kelsey's goat. People at the company were told in no uncertain terms that "It's Ascent Media now, God damn it, not Todd-AO any more; and if you don't like that, then don't let the front door hit you in the ass as you leave!"

About a year ago [Early 2004, ed] someone in upper-level management realized that they had a goldmine in the old Todd-AO name, and they resurrected it and have been using it ever since. All of the sound facilities now carry the Todd-AO name, and all of the editorial facilities carry the Soundelux name. The names "Liberty Livewire" and "Ascent

Media" have both been swept under the rug

Retirement

It was an exciting and fun ride while it lasted, and for me it lasted for 26 years [1977 - 2003]. The hours were long, the pay was good, and I got to meet some very interesting and entertaining people along the way. So what's not to like?

70mm films mixed at Todd-AO

Films mixed at Todd-

AO that were released in 70mm, strictly from memory: well, obviously the originals "Oklahoma!", "South Pacific", "Around the World in 80 Days", "West Side Story", "Porgy and Bess", "The Alamo", "The Sound of Music", "A Star is Born"; then from my days "Close Encounters of the Third Kind", "ET", "The Divine Miss M", "1941", "Empire of the Sun", . . . at this point my mind boggles, and films I know we did mix I can't remember if they were released in 70mm. I'm pretty sure that "Who Framed Roger Rabbit?" was released

in 70mm.

Films I know for sure we made the 70mm prints, I don't remember whether we did the mix. We worked on so many films that it's hard to remember them all at one sitting. So many years ago, so much water under the bridge by now.

Interesting people I met at TAO

You asked which interesting people I had encountered during my incarceration at Todd-AO; unfortunately, many of the people



Since their interest was in interactive television, Liberty had little interest in, or respect for, large screen theatrical productions, so they picked from among the smaller companies to find television-minded executives to run the newly collected companies. Soon, Todd-AO was under the revengeful thumb of former competitors who had full control on it's future existence.

Soon, the name was gone, the people were gone, and the facilities were gone.

Interestingly, most of the people responsible for killing the golden goose were themselves put out of the company.

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who interested me were not household names - they were mostly engineers, mixers, editors, writers, associate producers (people who, for screen credit, will associate with a producer) and other below the line staff. Once in a great while, you see, in the wonderful world that is the motion picture industry, a producer will award "associate producer" credit to one or two of his staff in lieu of proper and adequate monetary remuneration. But only on special occasions, like weekdays.

But, of course, I did rub elbows with some fine folk whose names might well be recognizable to your readers. Sydney Pollack was always a joy to work with, and it was thrilling when Bette Midler was on Stage A. We were all proud that Barbra Streisand did a number of her films with us, as did John Landis and Bob Zemekis. I admit to being a bit slack-jawed when I met these actor/comedians whose work I particularly loved: Vincent Price, Sid Caesar, Danny DeVito, Dick Van Dyke, and Jason Alexander.

In 1992, I was very happy to have the opportunity to assist Mai Zetterling in repairing a damaged print of a film she had directed, "Amorosa", so she could show it in an as-perfect-as-possible condition at an industry screening. I had always enjoyed her acting, and I was thrilled to spend time with her; she was a wonderful lady. I later received a note from the Swedish Information Office thanking me on her behalf; I had it mounted and framed, and it hangs next to my Tech award from the Academy.

Todd-AO Feature Films

"Oklahoma!"	13.10.1955
"Around the World in 80 Days"	17.10.1956
"South Pacific"	19.03.1958
"Porgy and Bess"	24.06.1959
"Scent of Mystery"	06.01.1960
"Can-Can"	09.03.1960
"The Alamo"	24.10.1960
"Cleopatra"	12.06.1963
"The Sound of Music"	02.03.1965
"Those Magnificent Men in Their Flying Machines"	03.06.1965
"The Agony and the Ecstasy"	07.10.1965
"Doctor Dolittle"	12.12.1967
"STAR!"	18.07.1968
"Krakatoa, East of Java"	11.01.1969
"Hello, Dolly!"	16.12.1969
"Airport"	05.03.1970
"The Last Valley"	28.01.1971
"Baraka"	04.06.1993

Todd-AO Short Films

"The Miracle of Todd-AO"	25.05.1956
"The March of Todd-AO"	24.12.1958
"The Tale of Old Whiff"	06.01.1960
"Man in the 5th Dimension"	22.04.1964
"The Artist Who Did Not Want To Paint"	07.10.1965
"CineSpace 70"	1986

Dr. O'Briens 1953 Outline of the Todd-AO Process

The following letter is a reprint of a letter written 50 years ago by Brian O'Brien. Thanks to Brian O'Brien Jr., the letter was recently discovered. What's interesting, is the date when Mike Todd met with Brian O'Brien and the date when Brian O'Brien and Mike

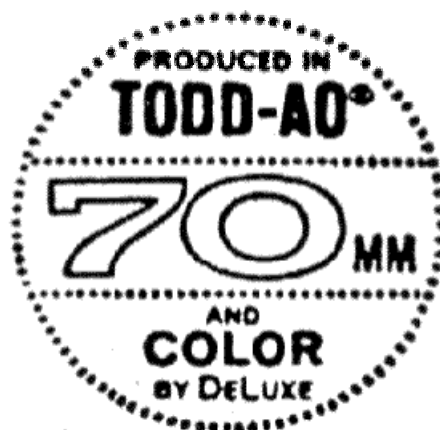
Todd met with Walter Stewart of American Optical Company.

April 20, 1953

Dr. Cornelis W. de Kiewiet, president
University of Rochester
15 Prince Street
Rochester, New York

Dear Dick,

On Monday, March 30th, during your absence in the South, Don Gilbert telephoned me at Southbridge, to say that he had had a call from Herb Eisenhart about an announcement appearing in the Rochester papers. Apparently on the preceding Thursday, the Rochester papers carried a prominent article announcement that a new system of motion picture photography and projection had been developed by the Institute of Optics, and was to be manufactured by the American Optical Company for the motion picture industry. Apparently Eisenhart was much disturbed by this and told Dan that the Kodak people were also, since neither had had an opportunity to even learn about the system in advance. I had not seen the Rochester papers, but Don read the announcement to me. Much of it was correct, but it failed to make clear the fact that the system was developed by the American Optical Company and not by the Institute of Optics.



Since Walter Stewart and I had a date to see A. K. Chapman the coming Friday, I told Don that I would also take the opportunity to see Herb Eisenhart and the others at Bausch & Lomb that same day, in order to clear up the misunderstanding which might reflect upon the University unless properly clarified. This I did, and I believe the matter is taken care of. Nevertheless, some misunderstandings might rise again, so I am outlining below the essential facts, so that you may have them available should the subject come up again. I am sending the same material to Ray Thompson and to Don Gilbert, for their information also.

On October 15th, 1952 I received a phone call from a Michael Todd in New York City, who wished to come to see me at Rochester that evening. I had never heard of Todd, but it seems that he is a well-known Broadway producer. When he arrived, he explained that he wished to have developed a system of motion picture photography and projection, which would give the same effect

as that currently shown at the Broadway Theatre under the name of "Cinerama". Todd explained that by using three motion picture cameras and three separate projection booths located on the floor of the theatre, motion pictures were shown upon a very large deeply curved screen, filling the end of the theatre. Although the mechanical and optical arrangements were crude and the subject matter of very indifferent quality, Todd stated that the New York audiences were peering the theatre and were very enthusiastic about the performance. What he wanted was a system which would accomplish what "Cinerama" accomplished, but with a single camera and a single projector, and free from any obvious defects.

I explained to Todd that what he asked was very likely not possible, but that the one chance of success lay in utilizing the best of scientific and engineering talent, together with the facilities of a large optical concern. I told him I could not serve as a consultant for him because of prior heavy commitments, but recommended that he go to Bausch & Lomb, Eastman Kodak, or American Optical Company, naming them in that order. He said he did not wish to do this, but returned to New York to think it over.

Todd telephoned me a number of times in the next five weeks, asking many questions. I told him repeatedly that his only hope of success was to put his problem in the hands of a large optical firm, each time naming the three large industries. Finally, on November 20th, he called me to say that he had been looking into the optical industry and had decided to put his problem in the hands of the American Optical Company, and asked how he should do this. I told him I was going to be in Southbridge the coming weekend, and that if he would meet me there, I would be glad to introduce him to Mr. Stewart, the President of the company. Todd seemed surprised, but agreed to do so. I believe he had had no idea of any interest on my part in American Optical Company, and I had carefully refrained from urging that he consult any particular optical firm. On Sunday afternoon, November 23rd, we met at Mr. Stewart's office in Southbridge. Todd explained his wishes, and it was evident that he had thought through the matter very thoroughly. Mr. Stewart decided to undertake what Todd requested, if I considered it at all possible. He then explained to Todd that I had joined American Optical Company for one year while on leave of absence from the University, and asked Todd not to disclose it, since we had agreed there would be no announcement until you felt the proper time had arrived.

Only after that meeting in Southbridge did I start work on the development of a new system. I had estimated the time required at between 18 and 24 months. However, there was great pressure for speed, and since more than 100 good technical men have been at my disposal, we completed the engineering work and the optical parts of the construction in just four months.

As you know, it had been part of my plan to maintain morale at the institute of Optics at top level during my absence. It was possible to help this along by letting the principal members of the Institute of Optics staff know about the new development, and to employ several as American Optical Company Consultants, so they might feel they were

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contributing and receive some payment at the same time. As always, their work has been fine, and they have aided the program materially, although in no sense has this been an Institute of Optics development.

Naturally, I am anxious to secure any favourable notice for the institute, especially at this time, so some weeks in advance of any contemplated public announcement I telephoned Charles Cole to tell him that a story would be forthcoming and that I would give him full detail later. He asked a few questions, but I gave him only very sketchy outline by telephone.

Unfortunately, factors in the motion picture industry made it necessary to release the announcement on a few hours notice, and it was impossible for me to get details to Cole. The word first appeared in the New York Times and the New York Herald Tribune on Wednesday morning, March 25th. Other papers picked up the story from there, embellishing it to suit their particular locality. I was amused to note that the Buffalo papers attributed the entire development to the Buffalo Plant of American Optical Company, while the Detroit Times contained an article that caused Herbert Eisenhart to think this must be a stock jobbing scheme. Actually, not one share of stocks is or have been available either in the Magna Theatre Corporation or the Todd-AO Corporation, but it is easy for people to think the worst.

Walter Stewart and I had a very pleasant visit with Chapman, Friday morning, April 3rd, after completing our business with him, and we feel sure from what he said that he and his associates were in no way upset by the Rochester papers. In the afternoon we saw Herb Eisenhart, Tom Taylor, Carl Hallauer and Carl Bausch and gave them all facts outlined above, just as we had with Chapman. I think they were quite satisfied, and it was a pleasant meeting. Carl Bausch said that he had been perfectly certain that I would not ignore Bausch & Lomb with any Institute of Optics development, no matter what the newspapers had to say, and I believe he meant it.

It was fortunate that we had business with Mr. Chapman that morning which took us to Rochester, and it was also fortunate that Mr. Stewart was willing to go with me to Bausch & Lomb. As you know, I am determined that nothing shall retard the progress of the Institute of Optics, and I think Mr. Stewart shares my desire to help it in every way. The new development is already a striking technical success. If it meets with commercial success it may be that the institute of Optics will benefit very materially. If so, it will have been well worth the effort.

With best regards,
Very sincerely, Brian O'Brien

History of Wide Screen

New Book about wide screen

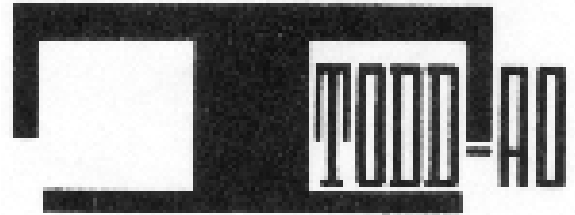
Call for articles and human reference
By Film Historian, Rick Mitchell, Hollywood

I am an American film industry professional who has worked in the post-production end of the industry for over 35 years currently working on a History of Wide Screen. The book will deal primarily with the theatrical industry, from W.K.L. Dickson's decision to go with the 35mm 1.33:1 format in

1891 through various efforts to introduce wider images over the succeeding 114 years, most notably in the late Twenties and the mid-Fifties. These developments will be put in proper historical and sociological contexts, especially as related to industry practices, and will be as technically accurate as can be discerned, including technical specifications. Ancillary developments in color and sound will also be covered. It is the hope of my consultants and myself to correct the inaccuracies and misinformation in previously published studies of the subject.

With the exception of the Wyzotsky book of the Seventies, previous works on this subject have been limited to developments in the United States and England and I am especially interested in documenting activities in other parts of the world. I would appreciate leads to articles in publications (which I would need in English) and surviving personalities, particularly those who worked on films made in the Fifties and Sixties. I am aware that some of my questions may be found in the recently published "Le Cinemascope entre art et Industrie" (Cinemascope between art and industry) but I have not been able to get access to this book, most of which is also in French, unfortunately for me.

Any information provided will be shared with the film format historians and film



artisans who are acting as consultants on the book, whose ranks include such recognized authorities on the subject as author John Belton, Thomas Hauerlev of in70mm.com, Martin Hart of widescreenmuseum.com, John Hora, ASC, and historian Daniel J. Sherlock. Credit will be given for any information used, of course.

Please direct any replies to:
e-mail: bigscreenist@earthlink.net

or to:
Rick Mitchell
Box 4024
Hollywood, CA. 90078-4024
USA

Thank you for your gracious assistance in this research.

*Below: Egyptian Theatre in Hollywood, USA
1956 showing "Oklahoma!" in Todd-AO.*



Pictureville Cinema

the best cinema in Britain

Pictureville Cinema opened in 1992. Described by David Puttnam as the best cinema in Britain, Pictureville Cinema screens everything from 70mm to video; from Hollywood to Bollywood; from silents to digital sound, including the new Dolby EX system. It is the only permanent, regularly programmed Cinerama installation in Europe and a magnet for enthusiasts, worldwide.



National Museum of Photography, Film & Television

Bradford, West Yorkshire BD1 1NQ, England
nmpft.org.uk