

VISCERAL IMAGE PRODUCTIONS

"VISUAL EFFECTS SPECIALISTS FOR THE GIANT IMAX® SCREEN"

THE ORIGIN AND MILESTONES OF OPTICAL EFFECTS FOR THE GIANT-SCREEN CINEMA

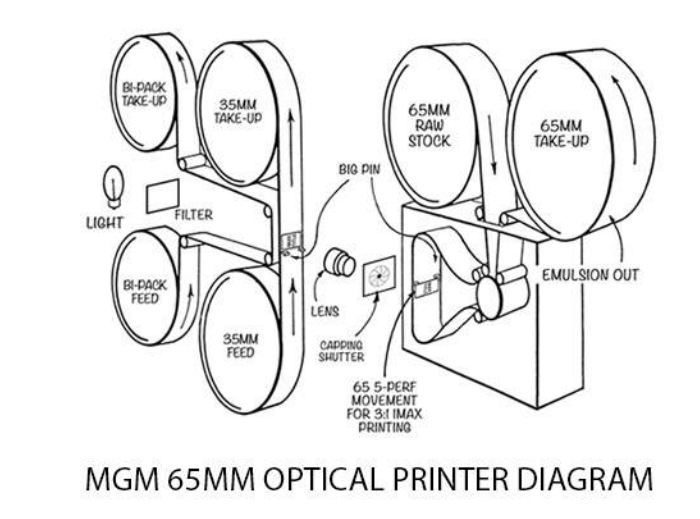
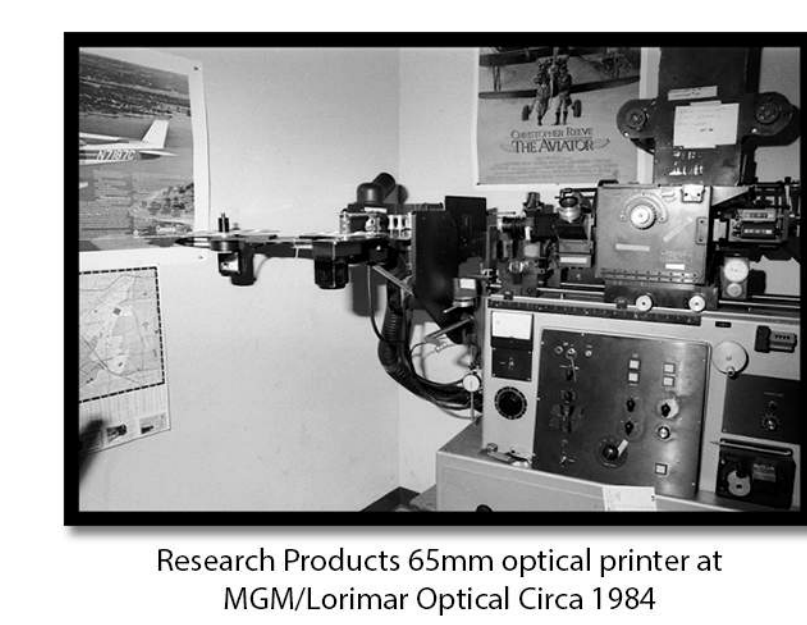
1964
"TO THE MOON AND BEYOND"
 New York World's Fair GRAPHIC FILMS CORP.
 "The New CINERAMA - 360 Process"
 65mm 10-perf Dome Venue



Shown at the 1964/1965 New York World's Fair by Cinerama Inc. using a camera with a single fisheye lens and projected onto a dome screen. The process was called "The New CINERAMA - 360 Process." The film was shown in a 96-foot high "Moon Dome." The audience is taken within the action which generally occurs in darkness to free the viewer from conventional ideas of size and time. Speeding up the events known to astronomers, the picture shows (through animation) how clouds of gas whirl into great galaxies, expanding outward from one another. Douglas Trumbull provided the artwork for the film.

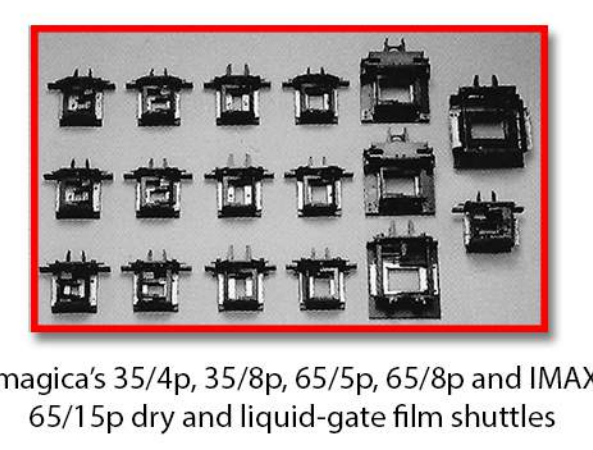
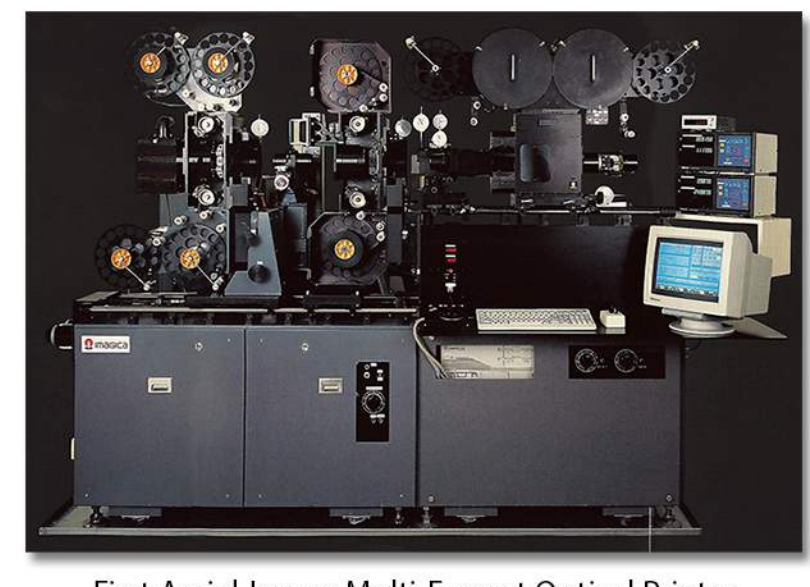


The optical department at MGM Studio had already been creating optical effects in the 65mm 5-perf format since the late 1950's on films like "BEN-HUR" and "MUTINY ON THE BOUNTY." In order to produce optical effects for the IMAX® 15-perf format, the 5-perf optical printer's process cameras were modified to shoot in a 3:1 film transport mode utilizing a blanking shutter to expose the equivalent of a single, 15-perf IMAX® frame. Over two dozen custom, 5-perf aperture mattes were manufactured to allow for various portions of the IMAX® frame to be exposed. This was the genesis of IMAX® optical printing.



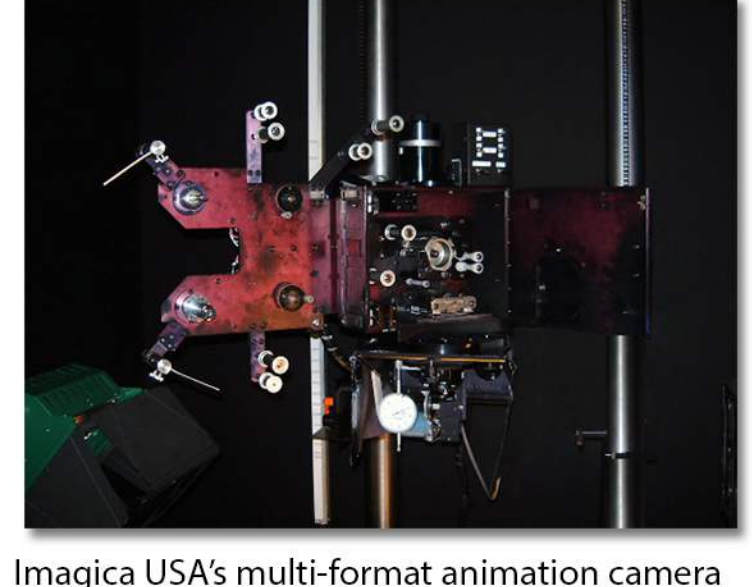
1984

The first Multi-Format Aerial-Image Wetgate Optical Printer was built at the IMAGICA Corporation Tokyo facility in the early 1980's. The printer functioned in all 35mm & 65mm formats: 35/4p, 35/8p, 65/70-5p, 65/70-8p, 65/70-10p, and 65/70-15p. It enabled compositing, format conversions, and restoration for giant-screen film productions. It was subsequently modified and enhanced, and a second version was installed in 1992 at IMAGICA USA, INC. in Los Angeles, California.

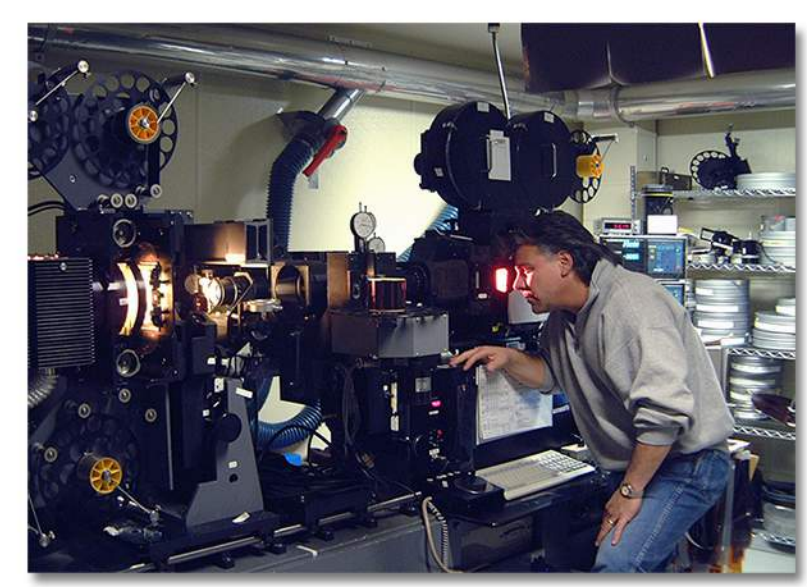


1992

Establishing the second Multi-Format, Aerial-Image, Wetgate Optical Printer in Los Angeles, the center of the film industry, helped bring new vitality to the "large format" or "giant screen" niche of the film business. By making it possible to create quality conversions of films in multiple 65mm formats, Imagica USA's optical printer had stimulated growth and diversity in this area, enlarging the potential distribution market for each film and supporting a wider variety of theater systems. The diverse aerial-image system provided the ability to create state-of-the-art optical effects compositing for theatrical and large format film productions on a single printer. In 1996, Imagica USA, along with the guided efforts of its President, Christopher Reyna, made significant improvements to the IMAX® "Sacred Master" camera & projection chart, which inevitably became the industry standard.



Imagica USA's multi-format animation camera



2nd Generation Aerial-Image Multi-Format Printer

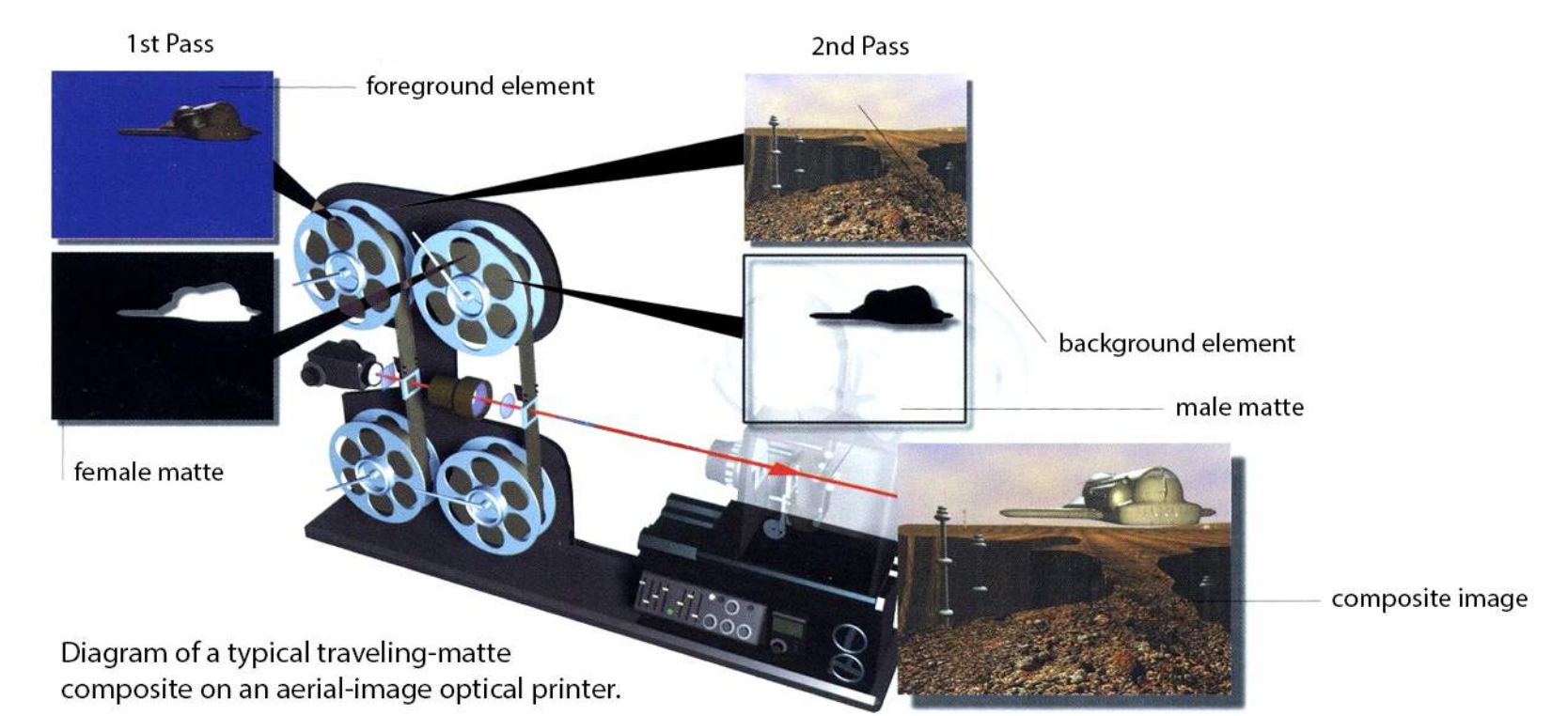


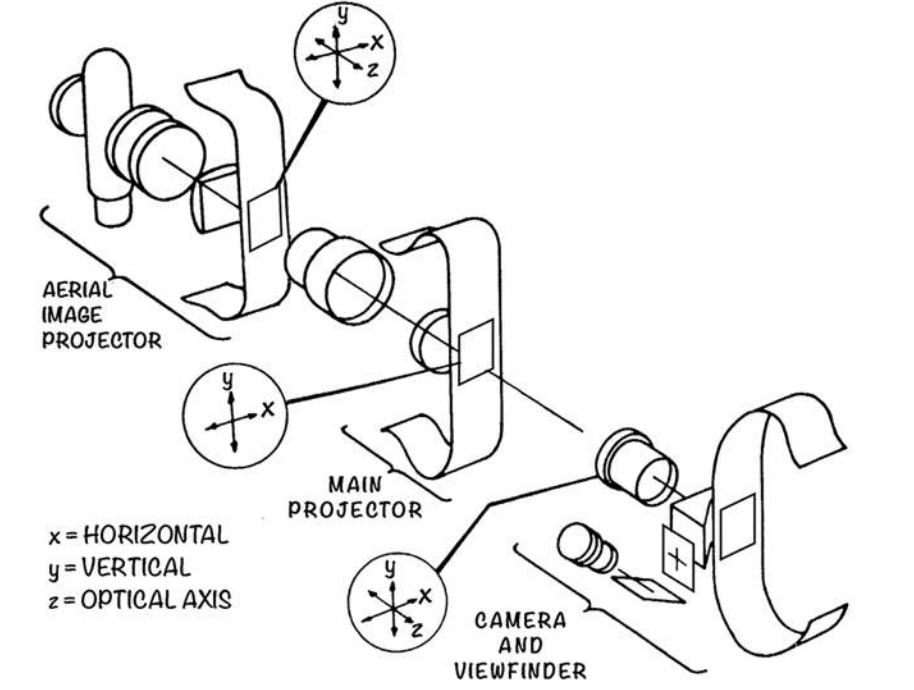
Diagram of a typical traveling-matte composite on an aerial-image optical printer.



IUS film recorders comprised of Scitairre Cine III CRT and MSM 65mm 15-perf camera.



65/35mm Multi-Format "BIGFOOT" Film Scanner



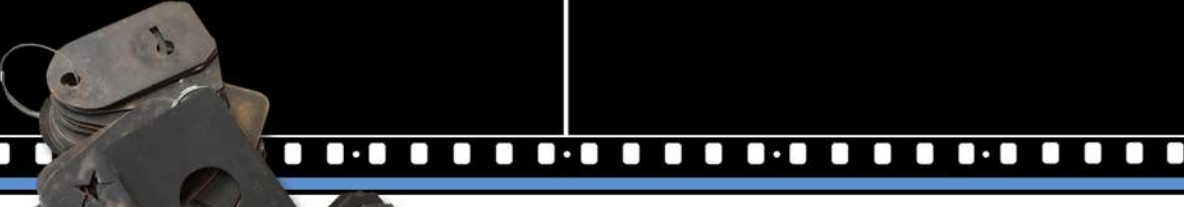
Schematic diagram of an animation stand.

In 2002, Imagica's multi-format optical printer received a Scientific and Engineering Award from the Academy of Motion Picture Arts & Sciences.



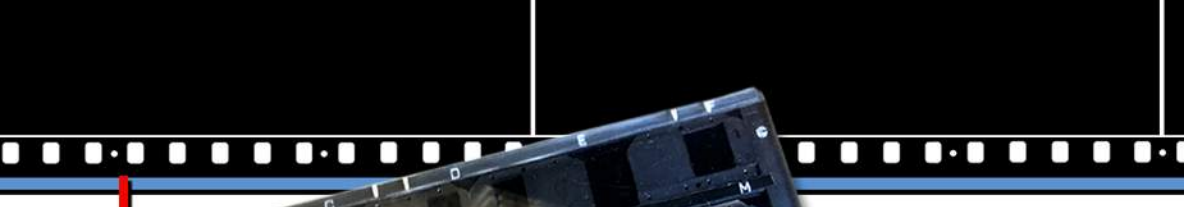
Imagica's IMAX "Sacred Master" chart established in 1996

1960
In-Camera Effects: The Early Days



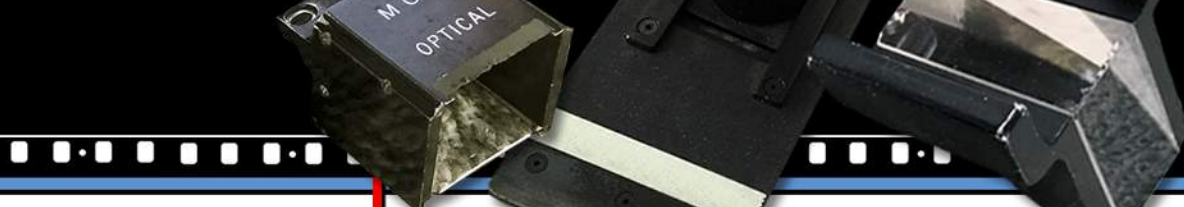
Vintage 170° variable camera shutter mechanism

1970
The Genesis of 65mm IMAX Optical Printing



65mm 5-perf film movement

1980
Traveling Mattes and Cross-Printing



Rotoscope lamphouse assembly

1990
Hybrid Composites and the Digital Era



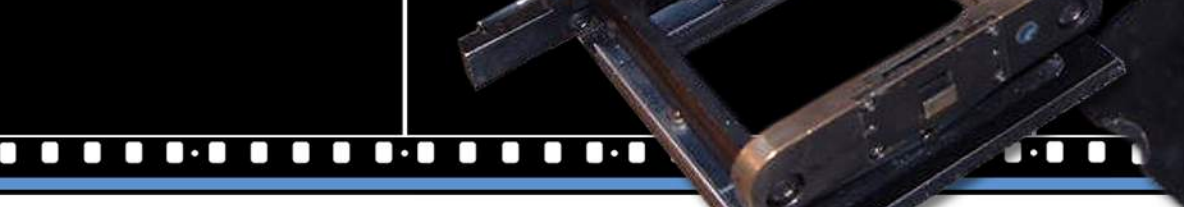
65mm 3-gang synchronizer

1990
Hybrid Composites and the Digital Era



65mm 15-perf Camera Movement

2000
Hybrid Composites and the Digital Era



Vintage optical FX ripple device

2000
Hybrid Composites and the Digital Era



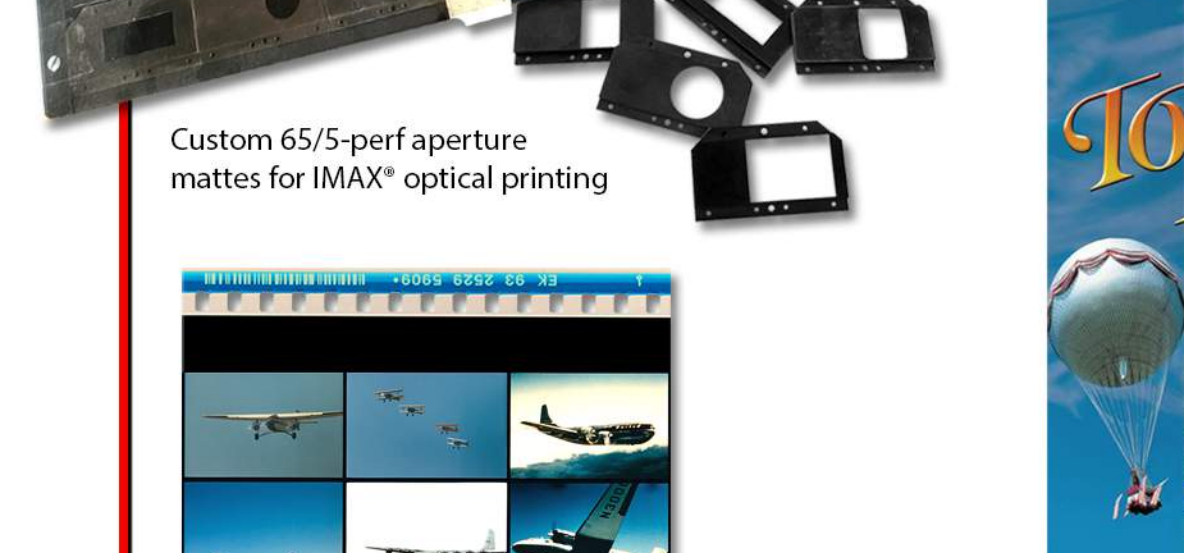
Academy Plaque for a Scientific and Engineering Award

1964
"TIGER CHILD"
 Fuji Group Pavilion Expo '70 ASUKA PRODUCTIONS INC. MULTISCREEN CORPORATION LTD. 1570 IMAX® Format - Dome Venue



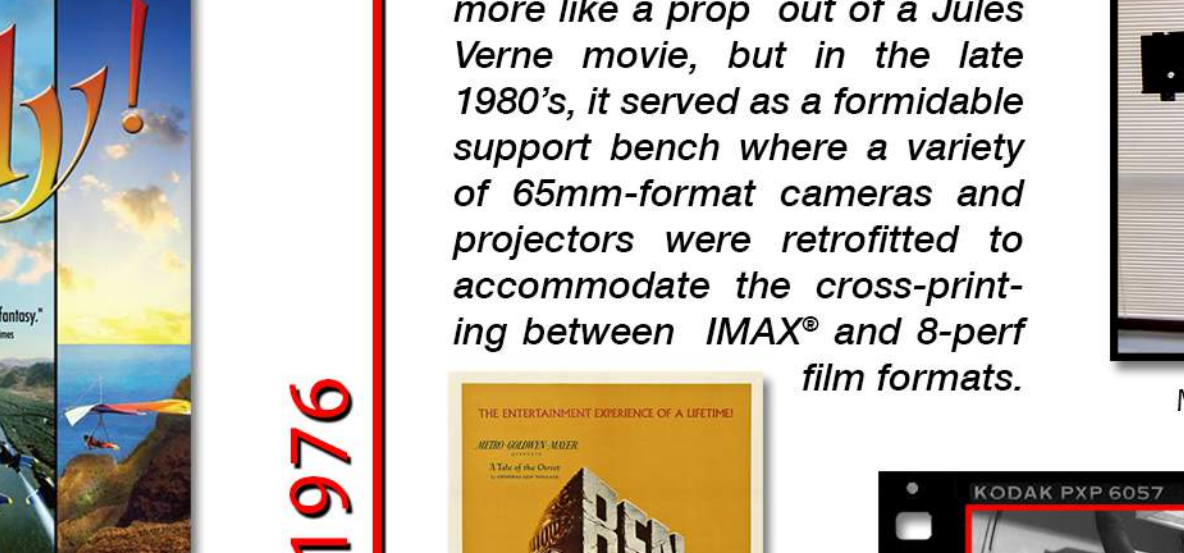
"TIGER CHILD" was considered the "hit of the Show" at EXPO '70 in Osaka, Japan. It was the first IMAX® movie ever made. It was directed by Canadian filmmaker Donald Brittain, and produced by Roman Kroitor and Kichi Ichikawa.

1970
"TO FLY"
 National Air and Space Museum MACGILLIVRAY FREEMAN FILMS 1570 IMAX® Format



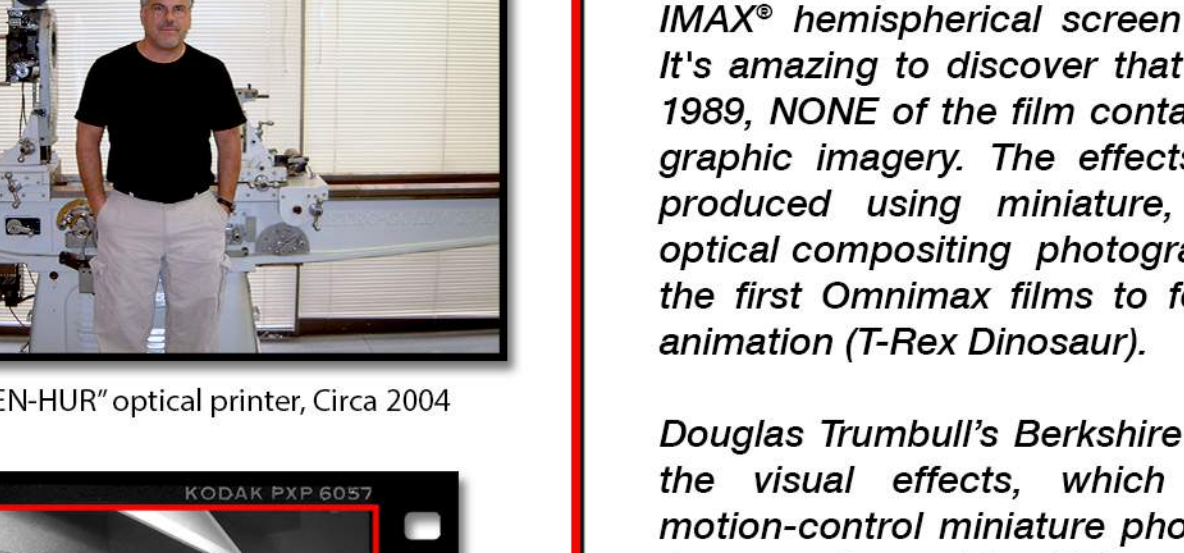
Originally built on the MGM Studios lot in preparation for creating effects for MGM's 1959 version of "BEN-HUR," this optical printer lathe-bed looks more like a prop out of a Jules Verne movie, but in the late 1980's, it served as a formidable support bench where a variety of 65mm-format cameras and projectors were retrofitted to accommodate the cross-printing between IMAX® and 8-perf film formats.

1984
"BEN-HUR"
 MGM "BEN-HUR" optical printer, Circa 2004



On July 1, 1976, "TO FLY" premiered at the Smithsonian Institution's National Air and Space Museum (NASM) as the centerpiece of the museum's grand opening celebration. The film pioneered the IMAX® format and marked the debut of Director Greg MacGillivray's giant-screen filmmaking career. The film has received numerous filmmaking awards and set records and, in 1996, was selected by the Library of Congress for preservation in the National Film Registry, America's film archive, where it joined such classics as "BIRTH OF A NATION," "CITIZEN KANE," and "GONE WITH THE WIND."

1989
"BACK TO THE FUTURE THE RIDE"
 Universal Studios Florida BERKSHIRE RIDEFILM / IMAGICA JAPAN 1570 IMAX® Format - Dome Venue



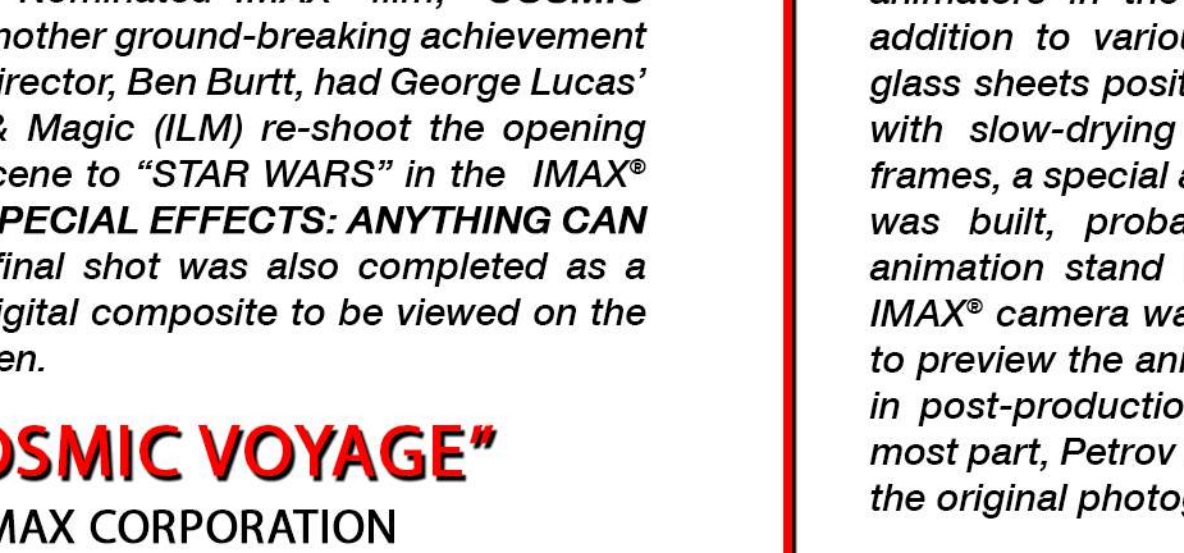
Douglas Trumbull's Berkshire Ridefilm produced the visual effects, which included all the motion-control miniature photography. Imagica Japan performed the 1570 optical composites on their multi-format, aerial-image optical printer under the supervision of Christopher Reyna.

1996
"COSMIC VOYAGE"
 IMAX CORPORATION NATIONAL AIR AND SPACE MUSEUM 1570 IMAX® Format



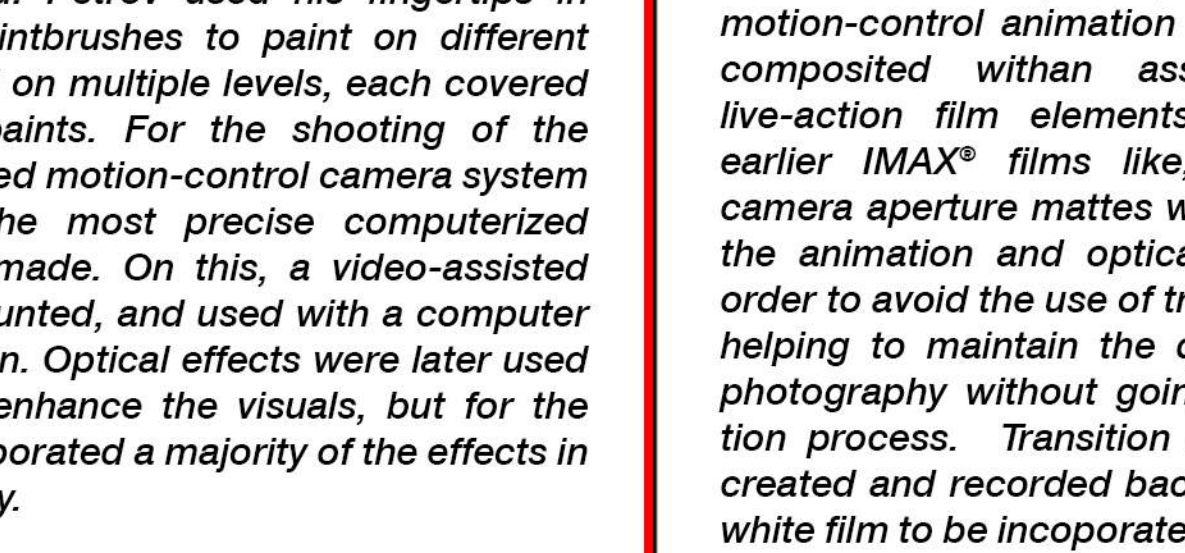
1996 was a year of unique "firsts" just prior to the digital boom that would forever change the art of visual effects filmmaking. The one & only 65/15-perf blue-screen film composite was achieved for the Academy Award Nominated IMAX® film, "COSMIC VOYAGE," and another ground-breaking achievement occurred when Director, Ben Burt, had George Lucas' Industrial Light & Magic (ILM) re-shoot the opening Star Destroyer scene to "STAR WARS" in the IMAX® film format for "SPECIAL EFFECTS: ANYTHING CAN HAPPEN." The final shot was also completed as a first-of-its-kind digital composite to be viewed on the huge IMAX® screen.

1999
"THE OLD MAN AND THE SEA"
 PASCAL BLAIS PRODS. IMAGICA CORP. PANORAMA FILM STUDIO 1570 IMAX® Format



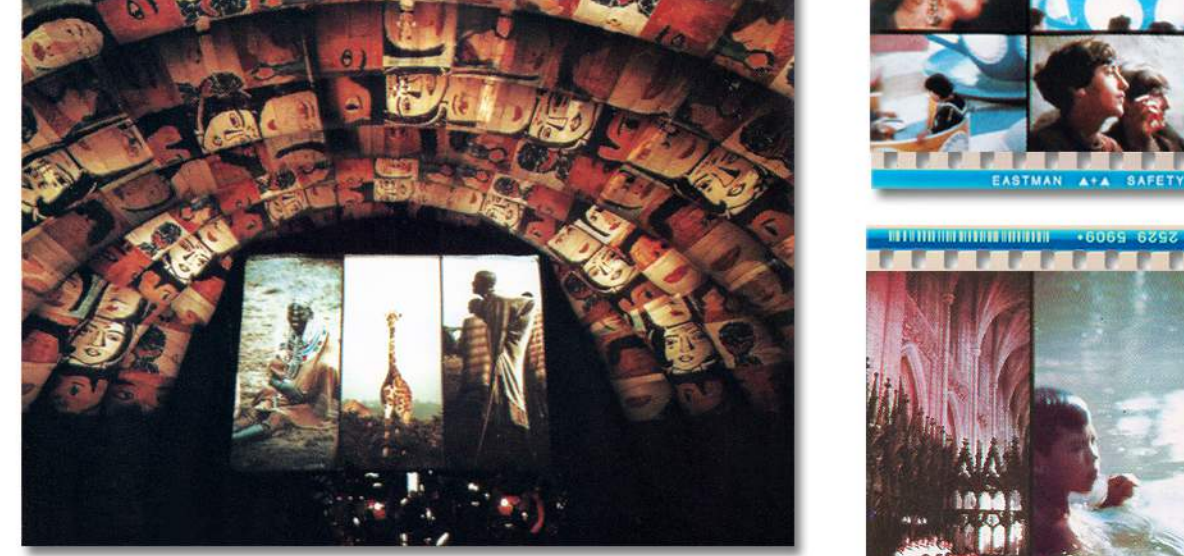
"THE OLD MAN AND THE SEA" was a paint-on-glass animated short film directed by Alexander Petrov, based on the novel of the same name by Ernest Hemingway. The film won many awards, including the Academy Award for Best Animated Short Film. The film's technique, pasted oil paintings on glass, is mastered by only a handful of animators in the world. Petrov used his fingertips in addition to various paintbrushes to paint on different glass sheets positioned on multiple levels, each covered with slow-drying oil paints. For the shooting of the frames, a special adapted motion-control camera system was built, probably the most precise computerized animation stand ever made. On this, a video-assisted IMAX® camera was mounted, and used with a computer to preview the animation. Optical effects were later used in post-production to enhance the visuals, but for the most part, Petrov incorporated a majority of the effects in the original photography.

2001
"SHACKLETON'S ANTARCTIC ADVENTURE"
 NOVA/WGBH BOSTON WHITE MOUNTAIN FILMS 1570 IMAX® Format



"SHACKLETON'S ANTARCTIC ADVENTURE" made some of the best use of combining photo-chemical and digital effects techniques to help tell the Director's story. Dozens of digitally restored archival photographs were shot on a motion-control animation camera and optically composited within an assortment of IMAX® live-action film elements. Taking cues from earlier IMAX® films like, "TO FLY," custom camera aperture mattes were manufactured for the animation and optical printer cameras in order to avoid the use of traveling mattes, and in helping to maintain the quality of the original photography without going through a duplication process. Transition mattes were digitally created and recorded back onto 65mm black & white film to be incorporated into hybrid composites. It would be approximately 4-5 years later that a majority of the VFX compositing performed for giant-screen films would be achieved solely through digital means.

1975
"VOYAGE TO THE OUTER PLANETS"
 Reuben H. Fleet Space Theater GRAPHIC FILMS CORP. / SHOWSPHERE 65/8-perf to 65/15-perf Dome Venue



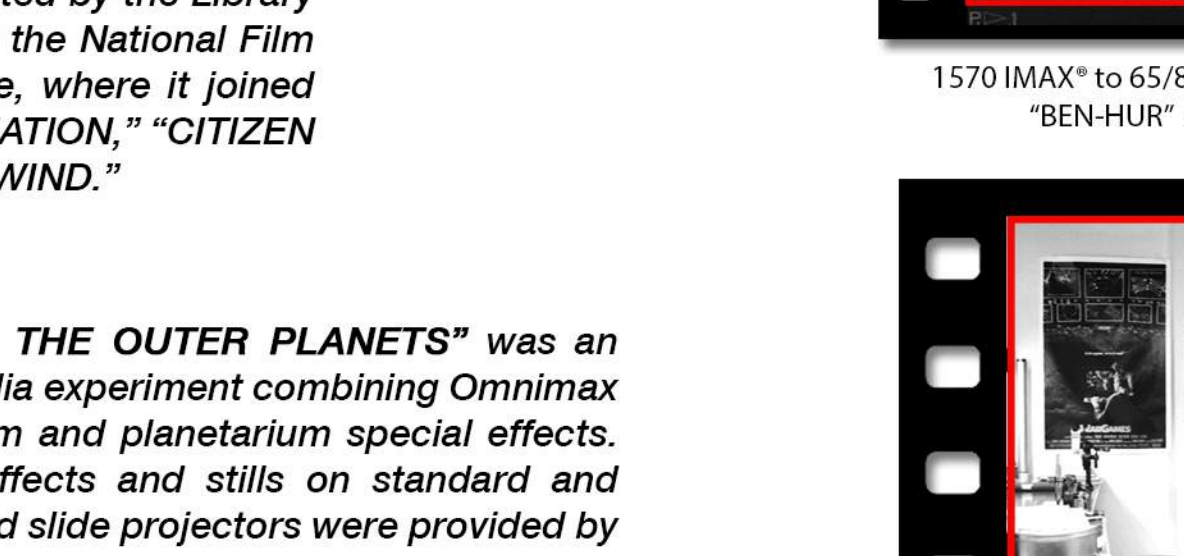
The audience viewed from one to nine images of different sizes and shapes on the giant IMAX® screen at any one time. Integrated with the motion picture were 28 giant slide projectors, capable of filling the entire pavilion with up to 168 separate images. The split-screened images were a byproduct of clever optical effects printing utilizing custom, 65mm 5-perf aperture mattes made for multi-pass optical printing at MGM Studios.

1975
"VOYAGE TO THE OUTER PLANETS"
 Reuben H. Fleet Space Theater GRAPHIC FILMS CORP. / SHOWSPHERE 65/8-perf to 65/15-perf Dome Venue



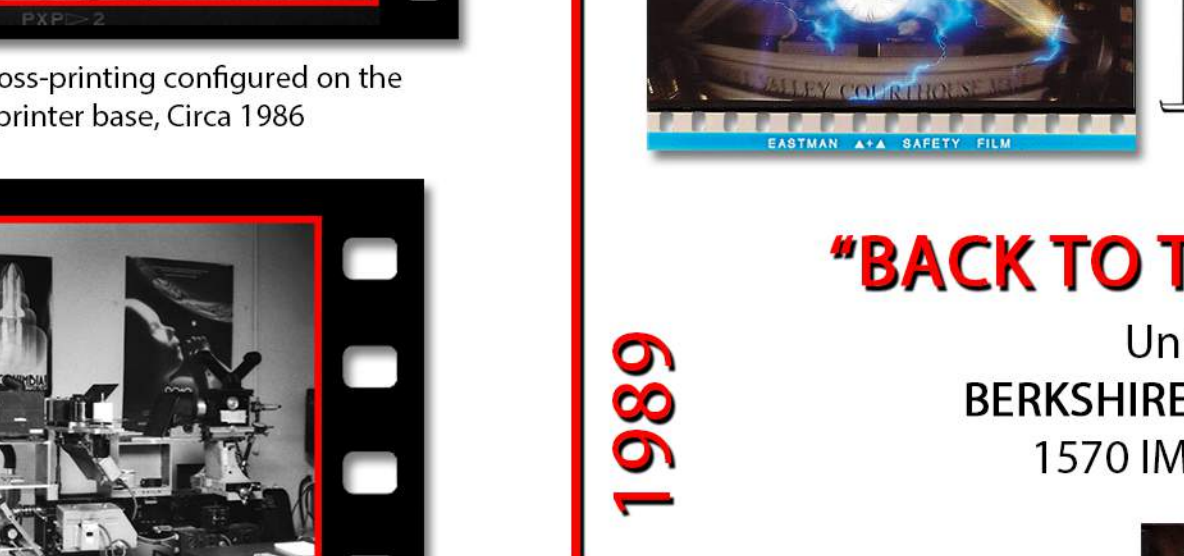
"VOYAGE TO THE OUTER PLANETS" was an early multimedia experiment combining Omnimax film, 70mm film and planetarium special effects. The special effects and stills on standard and zoom equipped slide projectors were provided by the Reuben H. Fleet Space Theater, and their Spike Space Transit Simulator (STS). The large format footage was provided by Graphic Films. The presentation was mostly multimedia, with short clips of the planets and spacecraft.

1989
"BACK TO THE FUTURE THE RIDE"
 Universal Studios Florida BERKSHIRE RIDEFILM / IMAGICA JAPAN 1570 IMAX® Format - Dome Venue



It wasn't infeasible to film directly in the Imax format which would be used for 1570 projection. The crew was therefore obliged to film in a smaller format (65mm 8-perf) for later optical blowup to 1570, and then projected onto a screen image magnification 600 times the size of the camera negative.

1989
"BACK TO THE FUTURE THE RIDE"
 Universal Studios Florida BERKSHIRE RIDEFILM / IMAGICA JAPAN 1570 IMAX® Format - Dome Venue



The various markings denoted specific areas such as:
 + = IMAX® Frame Center
 OH = OMNIMAX® aka "Dome" Horizon
 MIN IMAX/OMNI = Projection Cutoff
 MAX IMAX/OMNI = Camera Full Aperture

1996
"SPECIAL EFFECTS: ANYTHING CAN HAPPEN"
 NOVA/WGBH BOSTON 1570 IMAX® Format



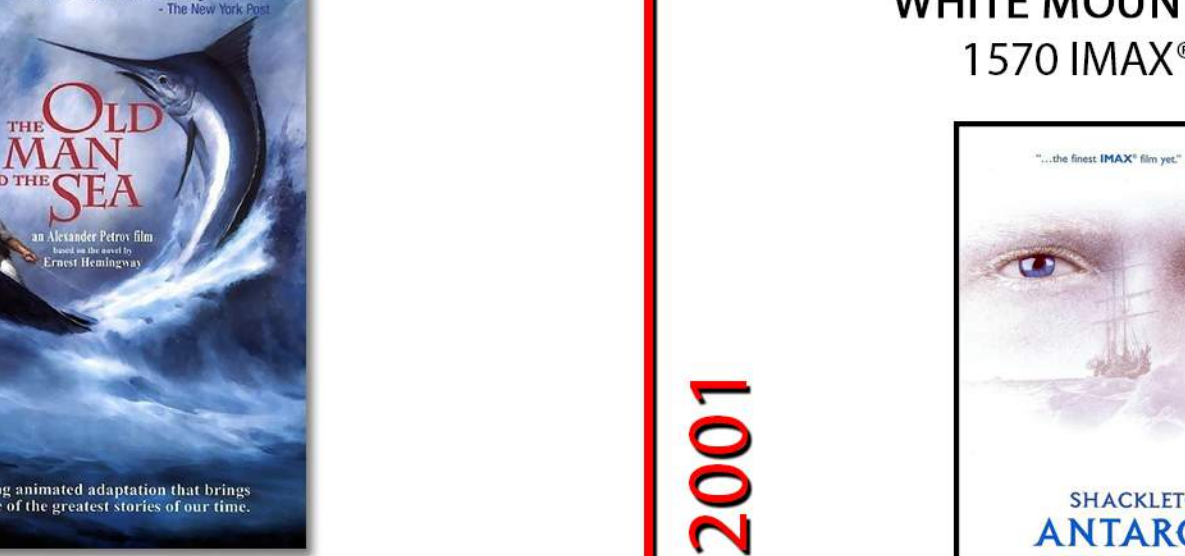
A historical re-creation of the opening scene from the original Star Wars film, shot in IMAX.

1999
"THE OLD MAN AND THE SEA"
 PASCAL BLAIS PRODS. IMAGICA CORP. PANORAMA FILM STUDIO 1570 IMAX® Format



Petrov hand painted his films frame by frame, and his painting style was stylized and personal.

2001
"SHACKLETON'S ANTARCTIC ADVENTURE"
 NOVA/WGBH BOSTON WHITE MOUNTAIN FILMS 1570 IMAX® Format



Cinematographer Frank Hurley's photos were digitally restored from images acquired from the Royal Geographical Society.