

HISTORICAL EQUIPMENT COLLECTIONS

A REPORT OF THE SMPTE ARCHIVAL PAPERS AND HISTORICAL COMMITTEE

By Edgar A. Schuller, Chairman

In this initial project a newly formed Archival Papers and Historical Committee has collected information on about 40 historical equipment collections with each committee member researching one or more collection. Since this report lists only a fraction of the motion picture and television equipment collections throughout the world, members are encouraged to submit information on other collections. It is hoped that this project will create a renewed interest in visiting and supporting historical collections and in preserving the many artifacts which form the foundations of our technology. Owners of individual pieces of historical equipment may find this listing helpful in finding a suitable depository so that future generations can evaluate present technology in terms of past inventions.

This committee has the following mission: "To collect facts and assemble data relating to the historical development of the motion picture and television industries, to encourage pioneers to place their work on record in the form of papers for publication in the *Journal*, and to secure equipment and materials of historic significance for placement in suitable depositories."

The first step in fulfilling the committee's mission was to solicit a series of short articles for the 80th edition of the *Journal* in October 1996. In the articles, 18 long-time members of the Society, including three past presidents, submitted their reminiscences of the history of the Society and the motion picture and television industries.

Historical Equipment Collections Project

The second project was to form a new committee whose initial task was to locate collections of historical equipment related to our motion picture and television industries. During the course of this investigation by the committee, it was found that collections range in size from full-scale museum exhibitions to small private collections. Responses came not only from the U.S. and Canada, but also from Europe and Australia. The project has not yet come to an end because descriptions of collections continue to be submitted. Since this report lists only a fraction of the equipment collections throughout the

world, it is hoped that additional submissions will be sufficient in number to warrant a follow-up article. Some respondents do not have a collection of equipment but possess only one or two items, which they would like to contribute to an existing museum. Hopefully, this initial directory will provide some assistance in locating an appropriate collection.

In this report it is only possible to give an overview of each collection, but much more information is available. For example, the Carey Williams Collection has an inventory list of over 300 motion picture items; the Tube Museum has a listing describing the numerous display panels, each of which contains many samples of specific types of vacuum tubes, thus providing an organized guide to the thousands of tubes in the collection; and the Jim Webb Collection offers a description of each type of the over 450 microphones in the collection. For readers who would like in-depth information or are interested in viewing a collection, the data which follows gives a brief description of the equipment collection, its location, and how to reach the contact person for additional information.

The committee encourages readers to submit data on the many other existing equipment collections of historical interest. Please note, however, that at this time the committee is not soliciting information about film, videotape

or audiotape libraries, catalogs, books, instruction manuals, photo or poster collections, i.e., software. We are, however, looking for information about equipment collections from SMPTE members in Argentina, China, Hong Kong, India, Italy, Japan, the Netherlands, Norway, Sweden, and other areas with a history of motion picture and television production.

Information about equipment collections should be submitted in the format shown with the collections, starting with a 75-word description, including mention of some rare or unique item. This should be followed by the person to contact (curator or owner); the mailing address; phone, fax, and e-mail numbers; viewing hours; and advice on how to inquire. In addition, please submit a good quality photograph of a singular or exceptional item from the collection along with a 30-word description so that an informational caption can be created. This information should be mailed to the Chair, Archival Papers and Historical Committee at Society Headquarters.

I would like to thank all of the contributors who gathered the information for this report and, in particular, William Topazio, whose assistance in organizing the data into a form suitable for printing was of great help. Much time and effort has been given to ensuring the accuracy of this report, but we welcome corrections and additions.

Some of the descriptions of collections in this report lack photos. In order to make our archival files more complete, we would appreciate receiving photos of significant or rare equipment in those collections along with information for captions as described above.

The names of the researchers are shown as the last item for each collection. Committee members who contributed are denoted with an asterisk [*]. For more information on any listing, please contact the appropriate person or the researcher.

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Academy of Motion Picture Arts and Sciences

The Academy collection includes more than 1,000 motion picture artifacts, ranging from pre-cinema optical devices to early motion picture cameras and projectors, as well as props, costumes, and other items. Of special interest is a working Edison Kinetoscope (1895), a Lumiere Cinematographe (1896), an Edison Vitascope projector (1896), a silent Pathe Camera (1911), and a Technicolor Three-Strip Camera (1939).

Contact: Daniel Woodruff

Address: The Margaret Herrick Library
333 South La Cienega Blvd.
Beverly Hills, CA 90211

Ph: 310-247-3000; Fax: 310-657-5139

Hours: Mon, Tue, Thu, Fri 10A-6P, Closed Wed, Sat, Sun.

Inquiries: Preferred by mail, phone OK. Artifacts in special collections are available by appointment only to qualified scholars, students and other researchers who have a specific, bonafide research need. Requests regarding appointments for on-site research at the Library should be addressed to Special Collections-Artifacts at the address above.

Researcher: John Belton*

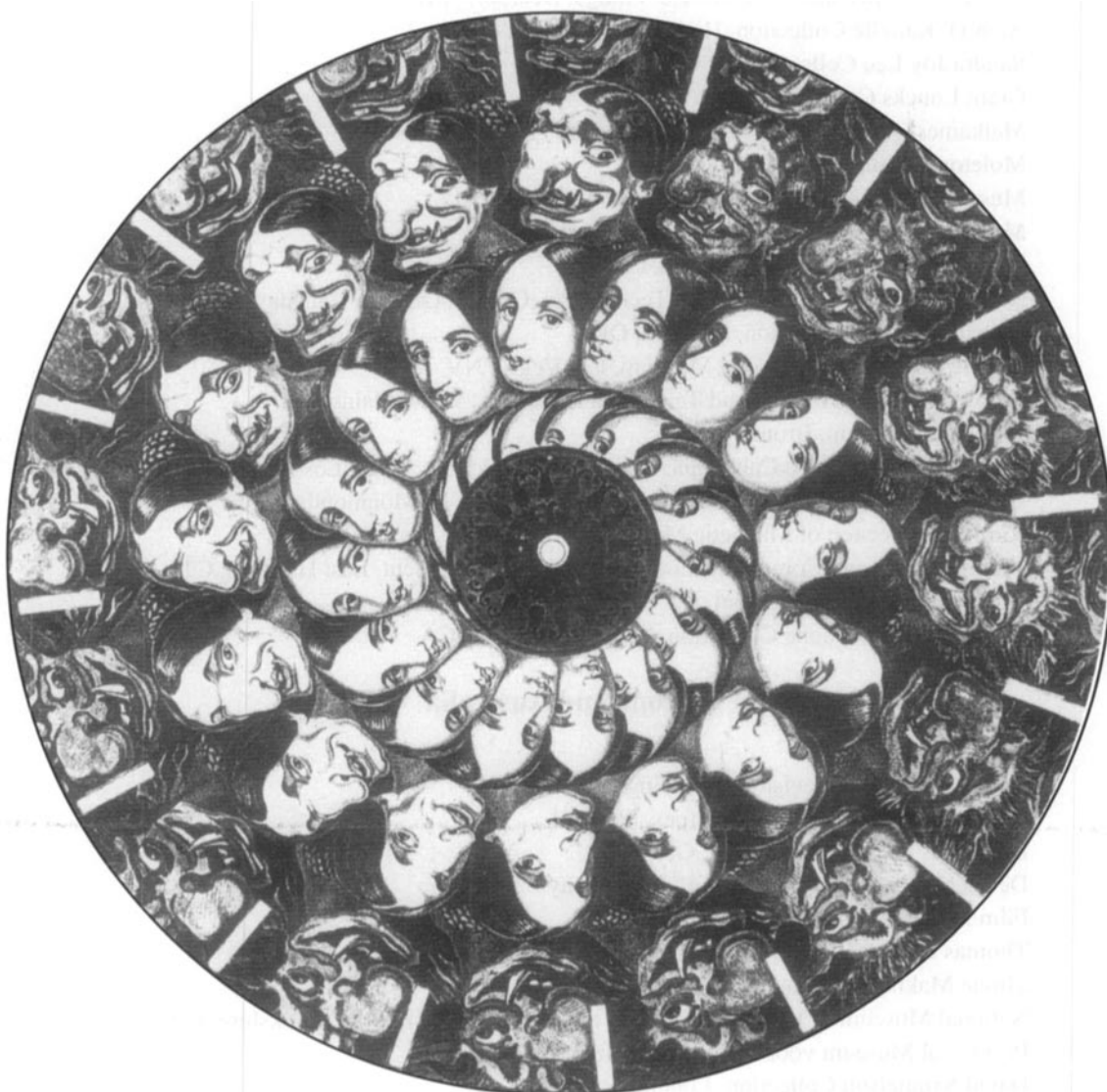


Fig. AMPAS 1. The oldest motion picture artifact in the Academy's collection is a phenakistoscope, invented in 1832 by Joseph Plateau in Brussels. The Academy's phenakistoscope (bearing the brand name Fantoscope) was manufactured in London by Ackermann and Co. in 1833. The device consists of a revolving cardboard disc which has a ring of pictures and slots through which one views the moving image in a mirror. Other important pre-cinema devices such as the zoetrope (1867) and the praxinoscope (1877) are based on the same principles used for the invention of the phenakistoscope. Photo courtesy of the Academy of Motion Picture Arts and Sciences.

American Museum of the Moving Image

A large permanent exhibition includes motion picture and television cameras; projection equipment; television receivers; grip, studio and laboratory apparatus; lighting equipment; sound and video recorders; microphones; editing equipment and video games. The Moving Image Technology collection consists of about 1,500 items, only one part of a larger holding of artifactual materials documenting all aspects of the material culture of film, video and digital multimedia.

Contact: Ms. Dana Sergent,
Curator of the Collection

Address: American Museum of the
Moving Image
35th Ave. at 36th St.
Astoria, NY 11106

Ph: 718-784-4520

Fax: 718-784-4681

E-mail: www.ammi.org

Hours: Tue-Fri 12N-5P
Sat-Sun 11A-6P

Inquiries: Welcome, preferably
by e-mail.

Researcher: John Belton*

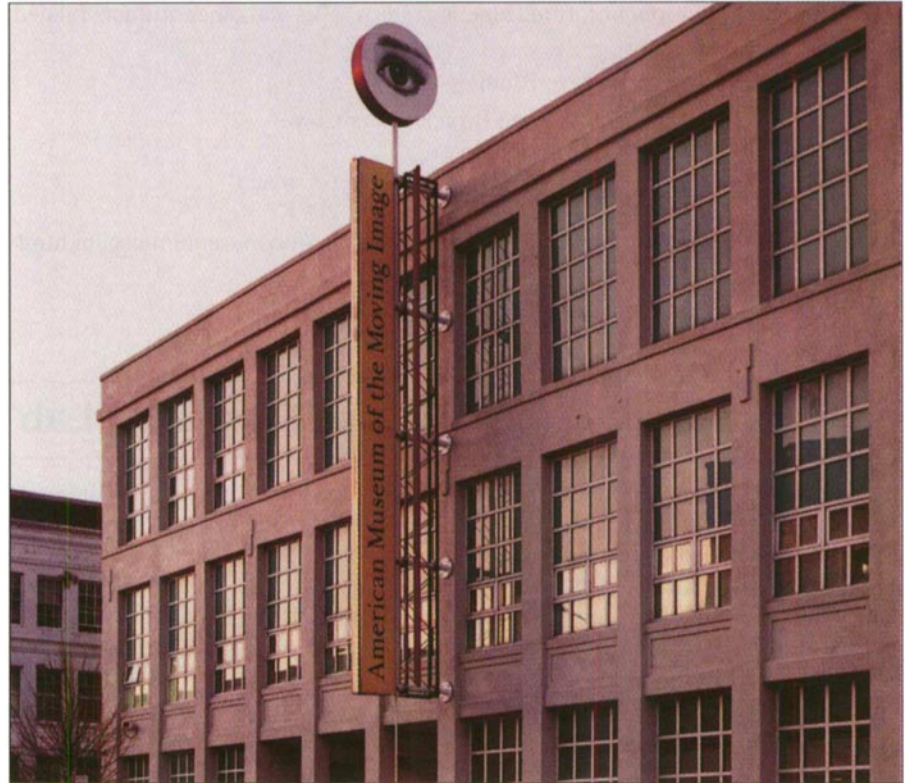


Fig. AMMI1. Exterior of American Museum of the Moving Image located in the Astoria section of Queens County, New York City. Photo courtesy of Peter Aaron/Esto Photographics, Mamaroneck, NY.

American Society of Cinematographers

The ASC maintains a reference library and motion picture equipment collection. Memorabilia on display include a Kinetoscope projector from the 1890s. The collection also contains examples of almost all of the pioneer motion picture cameras used in Hollywood, including two historic Technicolor three-strip cameras.

Contact: George Turner

Address: 1782 N. Orange Drive
Hollywood, CA 90028

Ph: 213-969-4333

Fax: 213-882-6391

Hours: By appointment.

Inquiries welcome by phone, fax or mail.

Researcher: Rod Ryan*

Antique Wireless Association Electronic Communication Museum

Outstanding collection of electronic communication hardware including vacuum tubes, consumer TV receivers, early wireless, ham and broadcast equipment. These are housed in a main building and a recently opened annex.

Address: AWAEC Museum
Village Green at Rtes. 5 & 20
Bloomfield, NY 11469

Ph: 716-657-6260

Hours: Sun 2P-5P from May 1 to October 31
Sat 2P-4P and Wed 7P-9P from June 1 to August 31.

Inquiries by phone.

Researcher: Jay Ballard*

Canadian Broadcasting Corp. Museum

A collection of microphones, film cameras, radios, TVs and other artifacts related to the Canadian Broadcasting Corp., from the 1930s to the present

Contact: Faye Blum

Address: Canadian Broadcasting Corp.

250 Front Street

Toronto, Ont., M5W 1E6 Canada

Ph: 416-205-5574; Fax: 416-205-2091

E-mail: <http://www.cbc.ca/aboutcbc/tbc/museum/museum.html>

Inquiries welcome.

Researcher: David Corley*

Case Research Lab

This is the site where the first commercially successful system of sound film in the U.S. was invented. The working spaces of the darkroom, chemistry lab and recording studio are much the same as when Theodore Case, Lee DeForest and Earl Sponable developed a sound-on-film system using a thalofide cell (Aeo Light tube). The Aeo Light, developed by Case and Sponable, was used to expose the sound record on a 35mm photographic film running through a Wall camera. (Earl Sponable later became Chief Engineer and Director of Research for Twentieth Century Fox Film Corp. and also served as the 16th president of SMPTE.) Their first sound camera, sound projector, experimental recording equipment, etc., show the history of the commercialization of sound film including such ventures as Phonofilms, Fox-Case Company, Movietone and Fox Films. Notable is a REO Speedwagon panel truck, which was probably the first mobile movie sound truck in the U.S.

Contact: Stephanie Przybylek, Curator

Address: Cayuga Museum

203 Genesee Street

Auburn, NY 13021

Ph: 315-253-8051

Fax: 315-253-9829 (call via voice phone first)

Hours: Tue-Sun 12P - 5P.

Closed Easter, Thanksgiving, Christmas.

Cayuga Museum is free;

Case Research Lab is \$2.50 per person.

Tours, research and special events can be arranged.

Inquiries welcome by phone or mail.

Researchers: John Belton* and Alex Alden

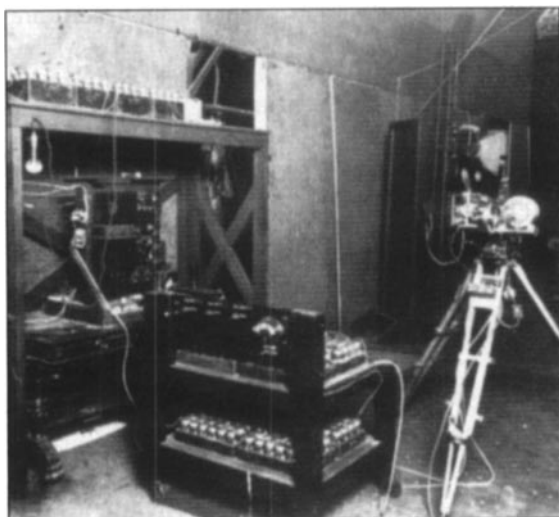


Fig. CRL 1. One of the earliest mobile sound trucks, now on display at the Case Research Lab.

Fig. CRL 2. Interior of Case Research Lab Sound Studio, ca. 1925.

George Eastman House International Museum of Photography and Film



Fig. GEH 1. International Museum of Photography at the George Eastman House.

This vast collection, the largest in America, contains objects from a period that spans the era from the invention of photography to the present day. Included are cameras, processing and motion picture equipment. Among the highlights are an Edison Kinetoscope, a Cinematograph camera made by the Lumiere brothers in France, a Bemis daguerrotype camera outfit built in 1840, and a lunar orbiter camera developed by NASA. Additional offerings include general tours, gallery tours, gallery talks, film screenings, the Menshel Library, Gannet Foundation Photographic Study Center and Film Study Center, a museum shop, and a cafe.

Contact: Edward Stratmann,
Assistant Curator
Address: George Eastman House
900 East Avenue
Rochester, NY 14607-2298
Ph: 716-271-3361 x327
Fax: 716-271-3970

Hours: Tue-Sat 10A-4:30P, Sun 1P-4:30P.
Open every day in May, 10A-4:30P
Closed Thanksgiving, Christmas,
New Years Day.
Wheelchair access.
Inquiries welcome.
Researcher: Harold Freedman*

Electrohome Museum

Electrohome's museum collection consists of 350-plus items covering the breadth of the company's operation. These include a 1907 wind-up acoustic phonograph featuring in-cabinet speakers, samples of radios from 1926 on, TVs from 1949 on, metal products from 1912 on, data and video projection equipment from 1975 on, electronic organs, visual display monitors from 1968 on, catalogues, files and pictures. In addition, an historical book was commissioned covering products and people from 1900 to today, written by Ray Stanton. Copies of the book are available for purchase.

Contact: Bill McGregor
Address: Electrohome Ltd.
809 Wellington St. N.
Kitchener, Ont. N2J 3V8, Canada
Ph: 519-749-3180; Fax: 519-749-3181

Hours by request.
Inquiries by phone, fax, mail.
Researcher: David Corley*

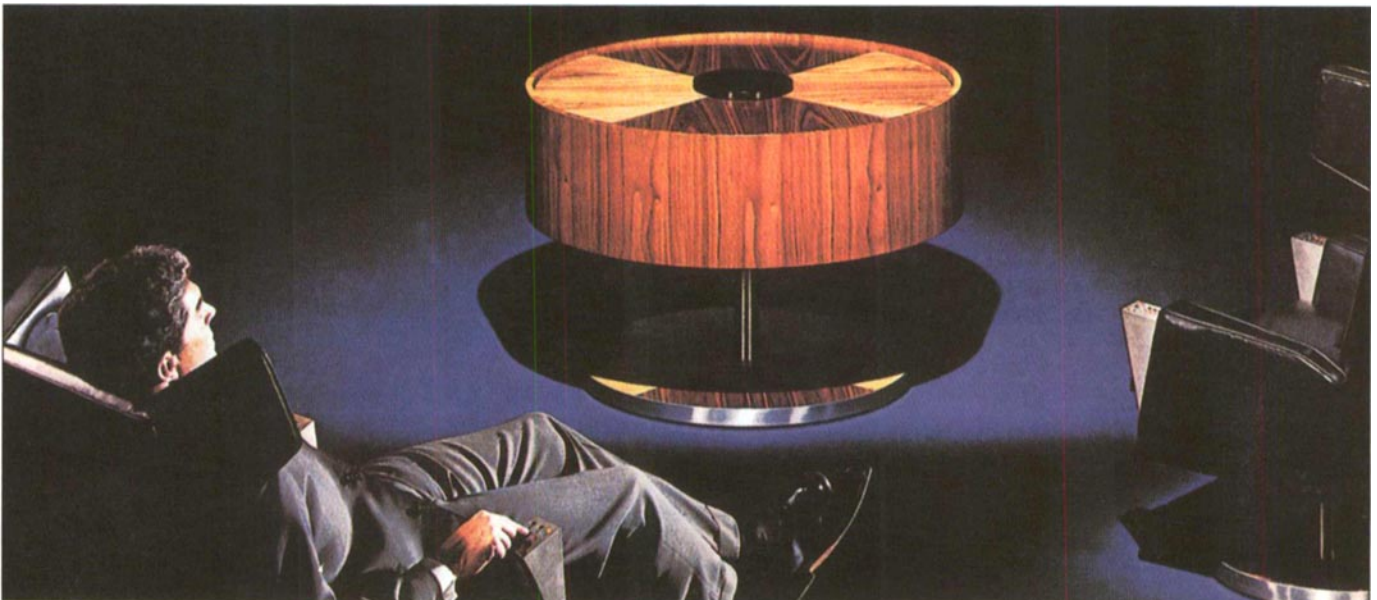


Fig. EM 1. Circa 75 home entertainment package, introduced in 1967, embodied futuristic design concepts. The circular console was described as "a communications centre in your home." The armrests of the chair contained the control panels, and the wings, at ear level, contained stereo speakers.



Fig. HFM 1. Henry Ford Museum. Courtesy of Henry Ford Museum and Greenfield Village, Dearborn, MI.

Henry Ford Museum and Greenfield Village

The largest, most visited indoor-outdoor history interactive museum in North America, with over a million artifacts and plenty to do all year long. It includes a collection of television equipment dating from 1948 onwards, together with displays of early vacuum tubes, test and communications equipment

Contact: Director, Henry Ford Museum

Address: 20900 Oakwood Boulevard
PO Box 1970
Dearborn, MI 48121-1970

Ph: 800-TELL-A-FRIEND or 313-271-1620

Fax: 313-982-6244

E-mail: <http://www.hfmgv.org>

Hours: 9A-5P every day. Closed Thanksgiving and Christmas.

Inquiries welcome.

Researcher: Fred Remley*

Alan D. Kattelle Collection

This collection of over 400 items illustrates the evolution of motion picture technology from magic lantern to sound-on-film cameras, with emphasis on substandard gauges. Included are an original Reynaud's Praxinoscope Theatre of 1878, a 1900 Mutoscope, and one of the first professional cameras manufactured by Bell & Howell in 1909.

Contact: Alan D. Kattelle

Address: 50 Old Country Road
Hudson, MA 01749

Ph: 508-562-9184

Fax: 508-562-9184

E-mail: alankatt@aol.com

Hours: By appointment.

Inquires by phone, fax, post.

Researcher: Ed Schuller*



Fig. AKC 1. Professional 35mm camera made by Bell & Howell, #5, ca. 1909. It had a wooden body and was soon superseded by the better known model 2709. One of only three currently known existing examples.

Sandra Joy Lee Collection

Personal collection of approximately 50 amateur portable, silent and sound projectors in 8mm, 9.5mm, 16mm and 35mm formats. Collection includes two Library Kodascope projectors with fold-out screens, projection screens and assorted editing equipment.

Contact: Sandra Joy Lee

Address: 609 C Street, Apt. A
San Rafael, CA 94901

Ph: 415-257-2459; E-mail: sandra@lucasdigital.com

Hours: Viewing by appointment only.

Inquiries welcome.

Researcher: Sandra Joy Lee*

Grant Loucks Collection

Over 300 items of rare professional motion picture equipment including a Technicolor 3-strip camera (#D-11), complete with magazines, original lenses, sun shade, and cases; the first commercially available zoom lens by Taylor Hobson Cooke for a Bell & Howell 2709 in 1932; an 1895 Darling and Wrench wood-based hand-cranked camera; the first 16mm camera model manufactured by Eastman Kodak Co. (the sixth unit) and a 1950's chrome-plated underwater housing with 35mm camera designed by Jacques-Yves Cousteau and M. Girardot.

Contact: Grant Loucks, President

Address: Alan Gordon Enterprises Inc.
1430 Cahuenga Blvd.
Hollywood, CA 90078

Ph: 213-486-3561

Fax: 213-871-2193

Hours and inquiries by phone, fax or mail.

Researcher: Karl Malkames*

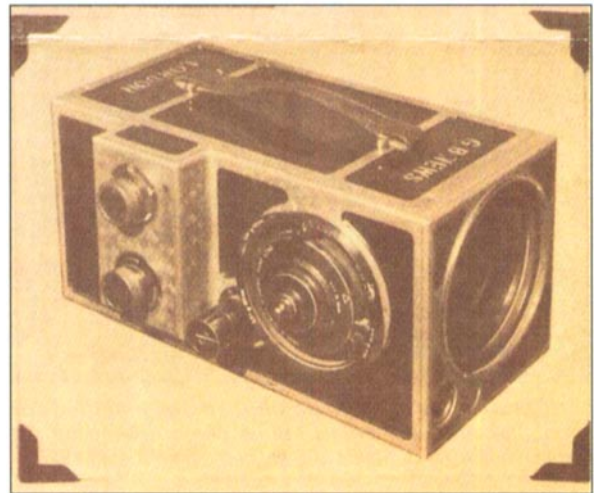


Fig. GLC 1. Bell & Howell camera with Cooke Varo lens, the first zoom lens (ca. 1932) made for filming. Zoom range: 40-120mm, f4.5. Focusing was by means of diopter lenses.

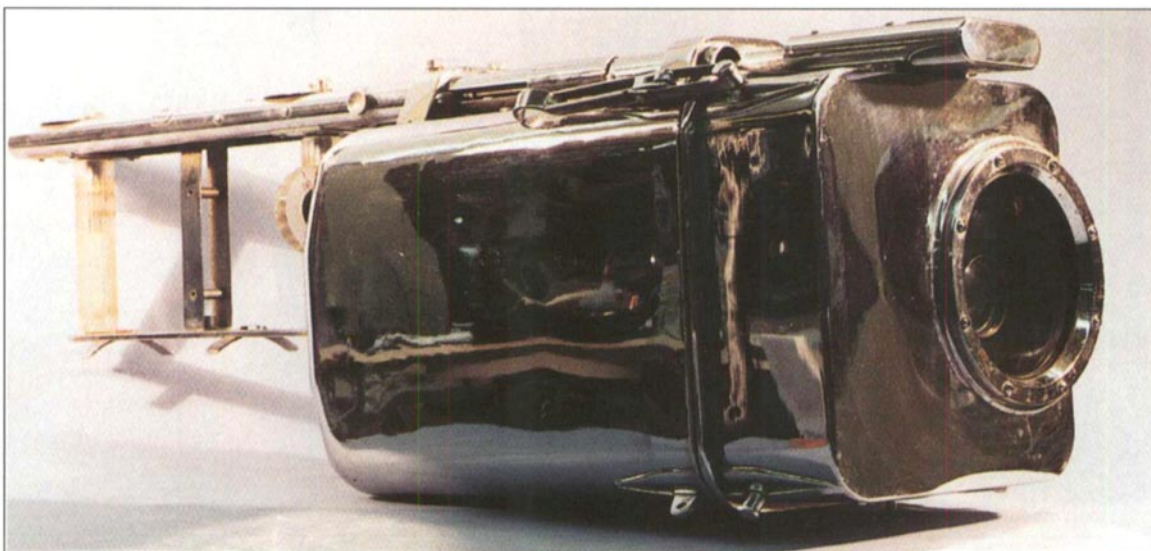


Fig. GLC 2. 1950's chrome-plated underwater housing with 35mm camera Morigraph designed by Jacques Cousteau and M. Girardot. The camera has 25mm and 50mm lenses and a 400-ft magazine.

Malkames Camera Museum

A private collection of cinematographer Karl Malkames. It specializes in motion picture cameras dating from 1893 to 1937. Some of the early machines were designed to operate as combination camera, printer, and projector. Many were used in shooting historic events such as the Rough Riders on San Juan Hill, the Admiral Byrd expedition, the Hindenburg disaster, the Burton Holmes travelogs, the aftermath of the San Francisco earthquake and *Birth of a Nation*. Also notable are an 1860 Zoetrope, an 1865 Choreutoscope, a 1925 Acme "suitcase" projector used on the 1928 Byrd expedition and an 1895 Mutoscope. Almost all cameras are restored to their original operating condition.

Contact: Karle Malkames, Owner

Address: Karl Malkames Camera Museum
One Sherwood Place
Scarsdale, NY 10583

Inquiries by mail only.

Researcher: Karl Malkames*

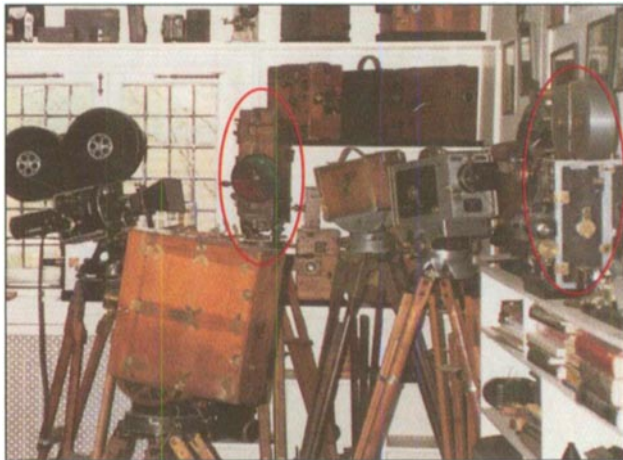


Fig. MCM 1. 1909 Moy & Bastic camera modified for Kinemacolor process; Wilart studio camera used by Art Sintzenich to film W. C. Fields in *Sally of the Sawdust* in 1925.



Fig. MCM 2. Part of Karl Malkames Camera Museum. In the center is a "Pancake" Akeley camera developed by Carl Akeley and first introduced before World War I. It has an unusual cylindrical shutter surrounding the entire mechanism. The camera shown, #315, manufactured in the late 1920s, was used by Jim Seeley on May 6, 1937 to photograph the Hindenburg airship disaster for Hearst's *News of the Day*.



Fig. MCM 3. [1] Bell & Howell camera used by Clyde Devinna to film *Trader Horn* and *White Shadows in the South Seas*; [2] Pathe studio camera used by Billy Blitzer while filming *The Birth of a Nation*; [3] 1898 Mutoscope camera used by Billy Blitzer with American Mutoscope and Biograph Company; "Pancake" Akeley camera taken to North Pole by Bob Donahue with the 1926 Byrd expedition.

Moletown



Fig. M. 1. Mole-Richardson 5-kW "Brute" high-intensity carbon arc spot lamp with 24-in. diameter lens used at MGM studios in the 1940s and 50s. Photo courtesy of Debbie Reynolds Museum.

Fascinating collection of vintage lighting and effects equipment made by Mole-Richardson for film and television. Many pieces trace their origin to the beginning of the motion picture industry. The exhibit is accompanied by historical illustrations of equipment in actual use. Souvenirs, books and film memorabilia available at Moletown store.

Contact: Howard Bell

Address: Mole-Richardson Co.
900 N. La Brea Avenue
Hollywood, CA 90038-2322

Ph: 213-851-0111

Fax: 213-851-7854

E-mail: moletown@mole.com

Hours: Mon-Fri 10A-6P, Sat 11A-5P.

Inquiries welcome.

Researcher: Jay Ballard*

Museum of Broadcast Communications of Chicago

Archives and equipment collection with emphasis on Chicago-area broadcasting. Gift shop.

Contact:

Bruce Dumont

Address: Cultural Center
Michigan Ave. & Washington St.
Chicago, IL

Ph: 312-629-6000

Hours: Mon-Sat 10A-4:30P
Sun 12N-5P.

No admission charge.

Inquiries by phone.

Researcher: Jay Ballard*



Fig. MBC 1. 1960 Nixon-Kennedy debate exhibit with TK-11 camera.

Museum of the City of San Francisco

A hundred years of movie equipment are on display at this museum in the Cannery at Fisherman's Wharf. 35mm motion picture projectors include machines from Optograph, Motiograph, Edison, Powers, Simplex, DeVry, Holmes, Century, Brenkert and others. Also included are Bell and Howell, Akeley and Mitchell 35mm and 16mm cameras as well as many 16mm projectors. The sound recording collection includes a Western Electric "D" spec recorder and record. There is also a large collection of miscellaneous motion picture production equipment. Group tours and educational programs are available. Rental of facilities is available for private functions.

Contact: Richard Bartell

Address: 2801 Leavenworth Street, 3rd Floor
San Francisco, CA 94133

Ph: 415-928-0289 or 415-871-4900 (Mr. Bartell's direct line)

Hours: Open year round 10A-4P Wed-Sun.

Free admission, donations welcome.

Inquiries by mail or phone.

Researcher: Ed Schuller*

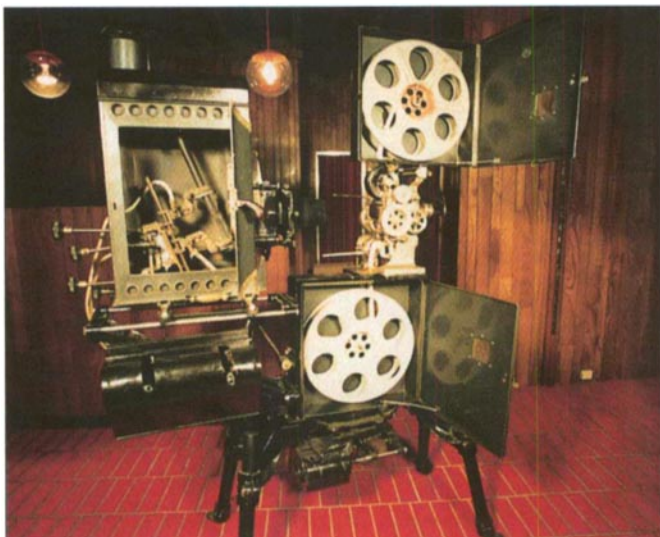


Fig. MCS 1. 1915 Powers 6-B with early 6-B base, silent motor drive and Powers low-intensity condensor arc lamp (type 6-B).



Fig. MCS 2. 1939 Art Deco Brenkert projector with RCA soundhead as shown at the 1939-40 San Francisco World's Fair.

MZTV Museum

Contact: Iain Logie Baird
Address: MZTV Museum
151 John Street #401
Toronto, Ont. M5V 2T2, Canada
Ph: 416-599-7339; Fax: 416-599-7339
E-mail: <http://www.mztv.com/mztv/> or
mztv@bravo.ca
Hours: Open 10A-6P weekdays by appointment.
Programming packages are available with the site's
traveling exhibition, "Watching TV."
Inquiries welcome.
Researcher: David Corley*

Dedicated to preserving the technological history of the television receiver, this museum has a specialized collection of North American TV receivers and related items. Housed in the heart of the CHUM/City Building, the museum's collection spans the evolution of television from 1920s mechanical scanning discs to 1970s solid-state electronics. Notable are the 1939 World's Fair "Phantom Teleceiver," the Baird "Televisor" and Alexanderson's "Octagon." Also displayed are technical books, periodicals, manuals, TV parts, picture tubes and vacuum tubes.

Founded by broadcaster and media innovator Moses Znaimer, the museum is a non-profit organization.

National Museum of Science and Technology

Contacts: Television: Brian Dewalt; Film: Geoff Rider
Address: National Museum of Science and Technology
P.O. Box 9724, Station T,
Ottawa, Ont., Canada K1G 5A3
Ph: 613-991-3044; Fax: 613-990-3636
E-mail: www.nmstc.ca
Hours: May 1-Labor Day: Sat-Thu 9:00-18:00, Fri 9:00-21:00
September-April 30: Tue-Sun 9:00-17:00,
closed Mon.
Individuals and organized groups may also view items in
storage by appointment.
Inquiries by phone, fax, mail.
Researcher: David Corley*

The Connexions Exhibit portrays the entire history of electronic communications. The museum also has an extensive collection of motion picture cameras, projectors and processing equipment. In addition to strong holdings in 8mm and 16mm equipment, the museum has the earliest and most complete surviving example of an IMAX rolling loop projector. The television collection consists of a representative sampling of receivers dating back to 1932. Production equipment includes most of the important studio cameras from the 1950s and 1960s as well as a growing collection of post-1970 video gear. The museum also has related holdings in still photography, sound recording, and radio.

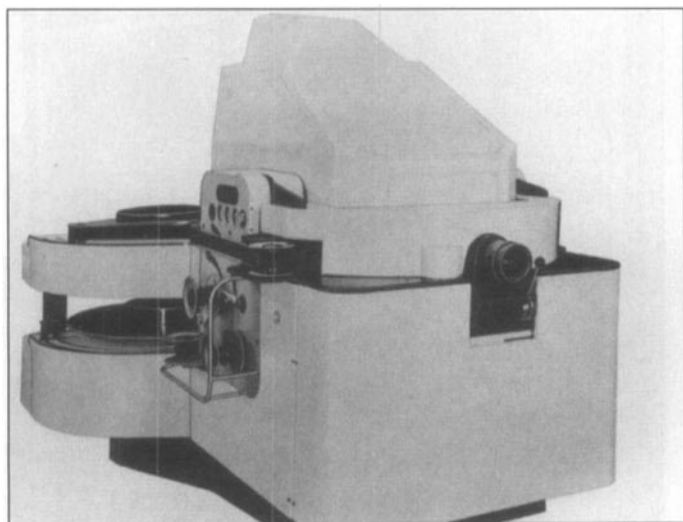


Fig. MST 1. A Canadian innovation: IMAX Rolling Loop Projector No. 3 (1972), Photo courtesy of National Museum of Science and Technology Corp./IMAX Corp.



Fig. MST 2. Scanning disc television (1932), built in Montreal to receive some of the first television broadcasts in Canada. Photo courtesy of National Museum of Science and Technology Corp.

Richard Prather Collection

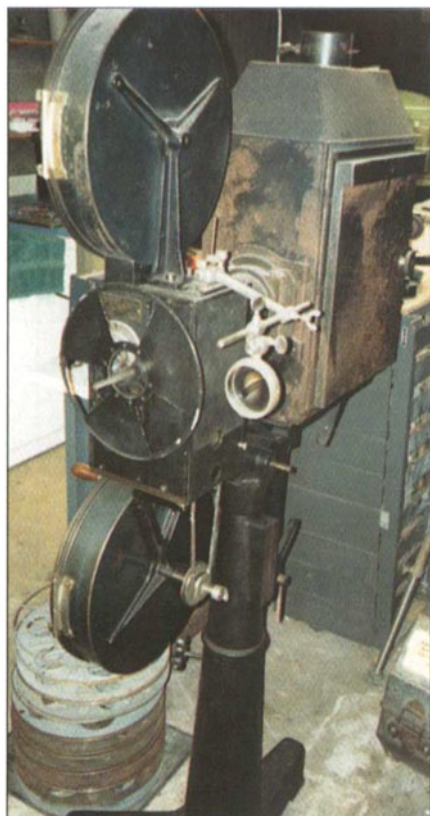


Fig. RPC 1. Hand-cranked Simplex 35mm projector, S/N 112, manufactured in 1913.

A projection equipment collection of over seventy-five 35mm and 70mm projectors as well as optical and magnetic sound heads, arc lamphouses, parts and accessories. Examples range from 1906 to the present with well-known models as well as smaller foreign and U.S. manufacturers. Notable is a 1913 Simplex projector, serial no. 112, complete with original base, magazines, arc lamp and hand crank.

Contact: Richard Prather

Address: 7816 N. Montana Avenue
Portland, OR 97217-6531

Ph: 503-289-4073

Fax: 503-289-4073 (request via voice
line first)

E-mail: k7ktp@compuserve.com

Hours: By appointment.

Inquiries by phone, fax, e-mail.

Researcher: Ed Schuller*

Debbie Reynolds Hollywood Museum

This collection in the Debbie Reynolds Hotel is Debbie Reynolds' private collection of memorabilia, valued at \$30 million. It contains 3,000 costumes and 36,000 square feet of props, furniture and technical equipment including early Mitchell cameras.

Contact: Patrick Patterson

Address: Debbie Reynolds Hotel
305 Convention Center Drive
Las Vegas, NV 89109

Ph: 702-734-0711

Web site: http://www.lasvegashost.com/lvh_t1.htm

Hours: Mon-Fri 10A-10P, Sat 10A-6P, Sun 11A-4P. Admission \$7.95.

Inquiries by phone or mail.

Researcher: Carlos V. Girod Jr., P.E*

Fig. DRM 1. Mitchell NC 35mm camera, first produced in 1933. 742 NC cameras were produced until 1971. Nearly every major studio in the world used them for outdoor sound photography as well as in studios. The NC led to the introduction of the BNC studio camera. Photo courtesy of Debbie Reynolds Museum.

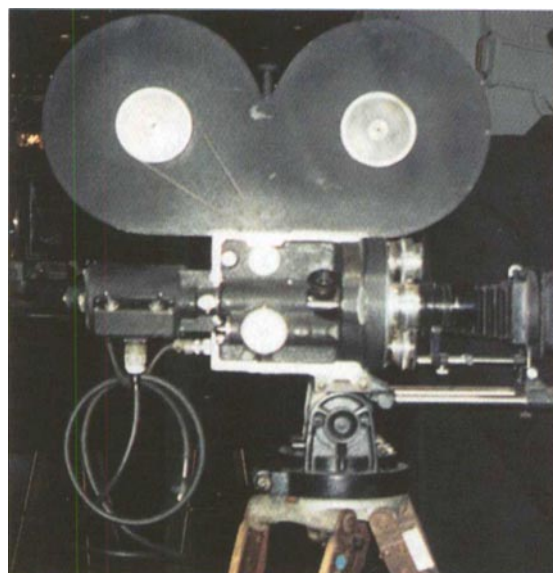
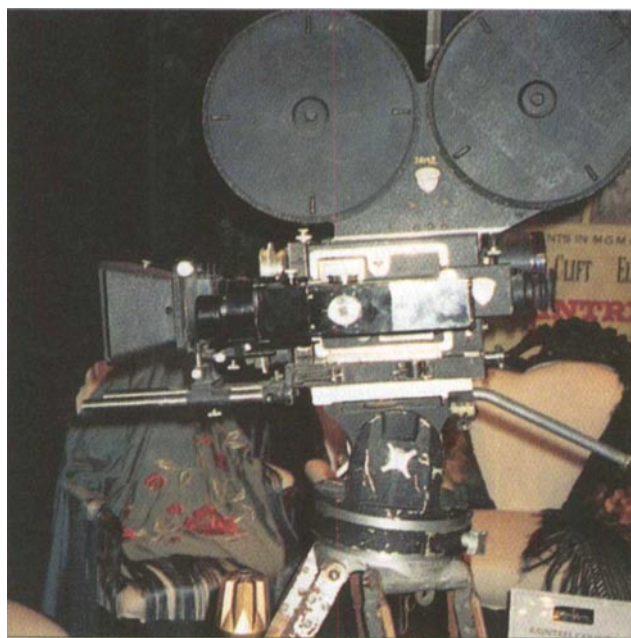


Fig. DRM 2. Bell and Howell 2709 35mm camera. This classic instrument was Bell and Howell's first hand-cranked camera, later modified with a motor drive. Over 1,230 were sold worldwide. These cameras are still in demand and have been used for special effects work in famous features such as Star Wars. In 1937 Snow White and the Seven Dwarfs was shot with a 2709. The original "Unit" shuttle mechanism is still made today, essentially unchanged from its 1912 design. Photo courtesy of Debbie Reynolds Museum.

SMPTE Collection



Fig. SMPTE 1. Graphoscope projector designed by C. Francis Jenkins, one of the founders of the SMPE and its first president.

The collection at SMPTE (then SMPE), a French Pathex Headquarters consists of a few older motion picture cameras, projectors and lenses. Notable items include a Graphoscope projector (1922), a Holmes 35mm projector (1927) and a French Pathescope 28mm projector (1910).

(then SMPE), a French Pathex 9.5mm camera and projector with manual and price list (1927), an Acme SVE 35mm projector (1922), a Holmes 35mm projector (1927) and a French Pathescope 28mm projector (1910).



Fig. SMPTE 2. Holmes 35mm projector, ca. 1920.

Contact: SMPTE Director of Engineering

Address: 595 West Hartsdale Avenue
White Plains, NY 10607

Ph: 914-761-1100; Fax: 914-761-3115

E-mail: cgirod@smpte.org, <http://www.smpte.org>

Hours: Mon-Fri, 9A-5P.

Inquire by phone, fax, post or e-mail.

Researcher: Carlos V. Girod Jr., P.E.*

The Tube Museum

Perhaps the largest and best collection of vacuum tubes in the U.S. and possibly the world. Located in the Engineering Library of Manhattan College, this collection contains everything from Nuvistors to transmitting tubes. Of special interest are early developmental tubes, Pearl Harbor radar tubes and an extensive array of imaging tubes, from Zworykin's Iconoscope and Philo T. Farnsworth's Image Dissector through Orthicons, Vidicons and Plumbicons, ending with modern CCD sensors.

Contact: Brother Patric Dowd, F.S.C.,
in residence

Address: C/O W2GK
4415 Post Road
Bronx, NY 10741-3499

Ph: (Manhattan College Engineering
Library) 718-862-7295

Hours: Viewings by appointment only.

Inquiries by mail only.

Researcher: Jay Ballard*

Fig. TM 1. A display of early developmental imaging tubes. From top: Zworykin's Iconoscope (ca. 1934), Farnsworth's Image Dissector (ca. 1930-31) and a pair of later Zworykin-Morto-Flory Iconoscopes with multiplier stages (ca. 1937). Photo courtesy of Manhattan College.



USC Cinema-Television Archives

Hundreds of examples of all kinds of cameras, projectors, sound and production equipment for both theatrical and consumer/non-theatrical use including still photography and pre-motion picture developments such as magic lanterns and mutascopes. Manufacturers include Akeley, Bell & Howell, Bolex, Brenkert, Debie, Eastman, Ernemann, Keystone, Pathe, Maurer, Mitchell, Motiograph, Powers, Reeves, Technicolor, Universal, Wall, Williamson. Notable among the cameras are Bell & Howell #3 ca. 1906 and the only Mitchell 55mm (used for *The King and I*). Projectors include two early Edisons; a Pathe, ca. 1905; a Simplex picture head #126 (the 26th made); and a rare Lumiere projector (only), ca. 1897.

Contact: Herbert E. Farmer

Address: USC School of Cinema-
Television
University Park
Los Angeles, CA 90089

Ph: 213-740-2921

Fax: 213-740-2920

E-mail: hfarmer@bcf.usc.edu

Inquiries welcome.

Researcher: Herbert Farmer*

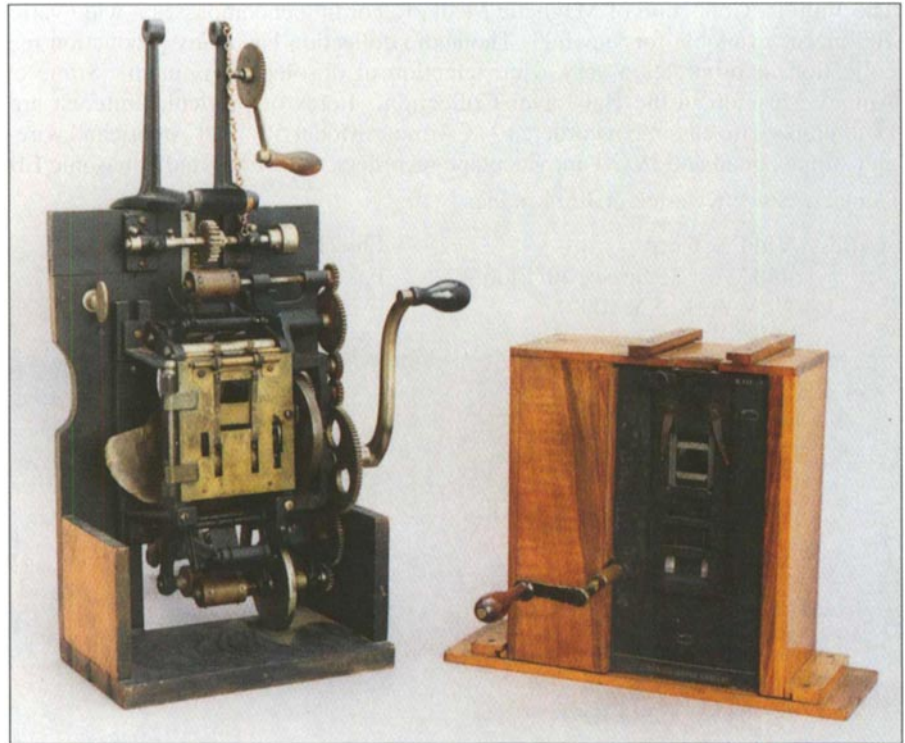


Fig. USC 1. Two of the earliest projectors viewed from the rear.

Left: an Edison projecting Kinetoscope, S/N 1303.

Right: a Lumiere Cinematograph projector, only, S/N 318. Its mechanism appears to be a factory adaptation of the more familiar Lumiere combination camera-projector.

Both projectors were mounted on stands to hold the light source housing and were built ca. 1897.

U.S. Army Communications Electronics Museum at Fort Monmouth

Artifacts and photographs chronicle the role of the Fort Monmouth labs and research center in significant technological firsts, including radio-equipped weather balloons in 1928 and radar-moon bounces in 1946. The collection also explores the private-sector spin-off technologies that were enabled by this research, such as walkie-talkies, solar cells and communication and weather satellites. Among the artifacts are early TV tubes such as Iconoscopes and some German tubes.

Contact: Mindy Rosewitz

Address: US Army Communications
Electronics Museum
Kaplan Hall - Building 275
Fort Monmouth, NJ 07703

Ph: 908-532-1682

Fax: 908-532-3788

E-mail: selfm-ptm@cecom3.monmouth.army.mil

Hours: Mon-Fri 12:00P - 4:00P. Free admission.

Inquiries welcome. For group tours call 908-532-2440.

Researcher: John Deewall*

VidiPax Collection of Magnetic Media Recording

The VidiPax Collection of Magnetic Media Recording encompasses a wide variety of audio and video equipment, with over 400 pieces available for viewing. The audio collection has many production recorders and prototype machines. The video collection incorporates a very wide selection of obsolete equipment. Some of these items were formerly housed at the Ampex Museum in the Hal Layer Collection. Items of particular interest are: 1925 Talk-A-Letter Telegraphone, 1931 Dailygraph wire cassette recorder, 1943 Armour Model 50 "first American" wire recorder, 1970 FBI Spy minirecorder, RCA and Ampex quad and JVC 1-in. videotape recorders, CBS EVR and Panasonic EIAJ cartridge machines.

Contact: Steve Kwartek or Jim Lindner

Address: VidiPax Corp.
450 West 31 Street, 4th Floor
New York, NY 10001

Ph: 212-563-1999
Fax: 212-563-1994
E-mail: vidipax@panix.com

Hours: By appointment only.
Inquiries via phone, fax or e-mail.
Researcher: Jim Lindner*

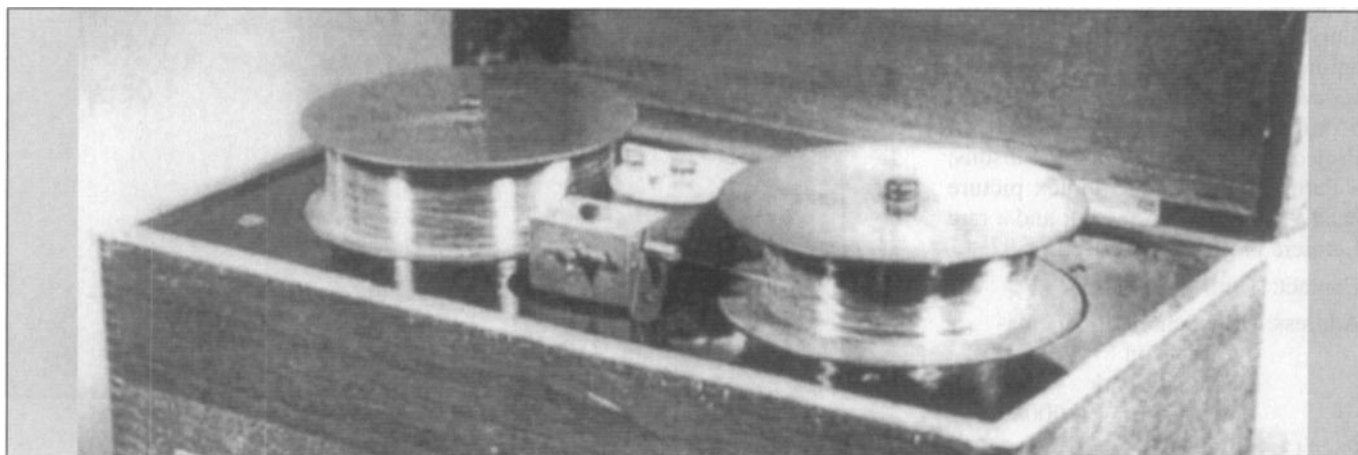


Fig. VC 1. Patented by Valdemar Poulsen in 1898, the Telegraphone was the first magnetic recorder to be made commercially available. The instrument used carbon-steel wire as the recording medium and was designed primarily as a dictating machine.

Vintage Radio and Communications Museum of Connecticut

Displays include radio, television, motion picture and telephone equipment, as well as advertising and memorabilia with descriptions of the pieces and their history. Museum staff is on hand to answer questions. Feature displays will be shown on a rotating basis. Audio, video and paper library available for classes, demonstrations and special events. Programs available for educational field trips.

Contact: John Ellsworth

Address: 1173 Main Street
East Hartford, CT 06108

Ph: 860-675-9916

Fax: 860-675-9916

Hours: Thu-Fri 10A-2P

Sat 11A-4P, Sun 1P-4P.

Appointments required 2 weeks in advance for groups and research.

Inquiries welcome.

Researcher: Raymond Blumenthal*



Fig. VRC 1. Patheoscope itinerant projector, ca. 1920. The machine is equipped with a hand crank and a sewing machine motor which allowed the projectionist to adapt to whatever facilities he encountered. It is assumed he carried a storage battery to light the lamp if no electricity was available. The width of the film is about 32mm.

Voice of the Twenties Radio Museum

A private collection of radio and television receivers including an early Atwater Kent radio and a Philco "Predicta" TV set.

Contact: Ralph Williams, owner

Address: 30675 Main Road
Orient, NY 11957

Ph: 516-323-3646

Hours: Viewing by appointment only.

Inquiries welcome.

Researcher: Jay Ballard*

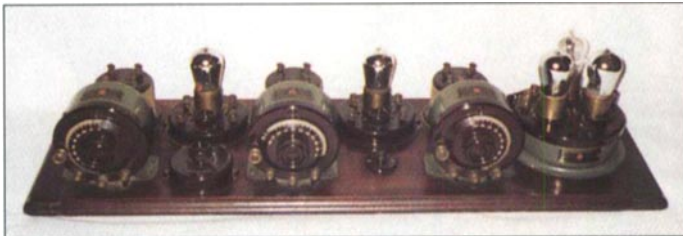


Fig. VT 1. Atwater Kent produced this dramatic "Open Set" in 1924. It had five tubes, was powered by batteries, and drove a gooseneck loudspeaker. All components were mounted on a wooden board called a "breadboard" by today's radio collectors. This Model 10 did not have an enclosure; instead it showed its instruments for all to admire.



Fig. VT 2. In the late 1950s, Philco realized it could gain market share with a dramatic-looking television set, The Predicta, with a 21-in. black and white tube and a futuristic appearance. Photos courtesy of Voice of the Twenties Radio Museum.

Jim Webb Microphone Collection



More than 450 rare and vintage microphones built between 1913 and 1970 including one-of-a-kind prototypes and limited production models. Many different models from Western Electric, RCA and Electrovoice and over 35 other brands are wired into a patch bay which permits comparison of the mic's sonic characteristics. Notable is the RCA Camden SPX laboratory standard calibration microphone, against which all RCA audio products were tested for a period of 20 years.

Contact: Film sound mixer Jim Webb

Address: Location Sound Corp.

10639 Riverside Dr., No. Hollywood, CA 91602

Ph: 818-980-9891 (or Jim at 818-769-6738)

Fax: 818-980-9911 (or Jim at 818-786-4724)

Hours: Mon-Fri 10A-4P, Sat 9A-12P. Open to public. Free.

Inquiries welcome.

Researchers: Ben Sobin* and Jay Ballard*

Carey Williams Collection

This private collection consists of thirty six 35mm motion picture cameras and over two hundred 35mm motion picture projectors and mechanisms as well as television cameras, telecines, quadruplex videotape recorders, receivers, camera cranes and tripods. Rare projectors include an Amet Magnescope, a Bell & Howell Kinedrome, and the Edison Spool-Bank projector. The collection includes most models in the evolution of Powers, Simplex and Motiograph projectors.

Contact: Carey Williams

Address: PO Box 09075
Chicago, IL 60609

Ph: 773-523-5906

Hours: By inquiry

Inquiries welcome by phone or mail.

Researcher: Karl Malkames*



Fig. CWC 1. Clockwise from top: Ultraphone speaker horn of 1928 from Standard Theater, Chicago; Super Simplex projector head on Western Electric base for sound-on-film and on disk with variable speed turntable, 1928 (the projector head has a turret for a Magnescope lens and uses a high-intensity condenser carbon arc lamp by Hall and Conelly); outdoor folding chairs from the Mosholu Theater, a rooftop theater in the Bronx, NY, 1926.

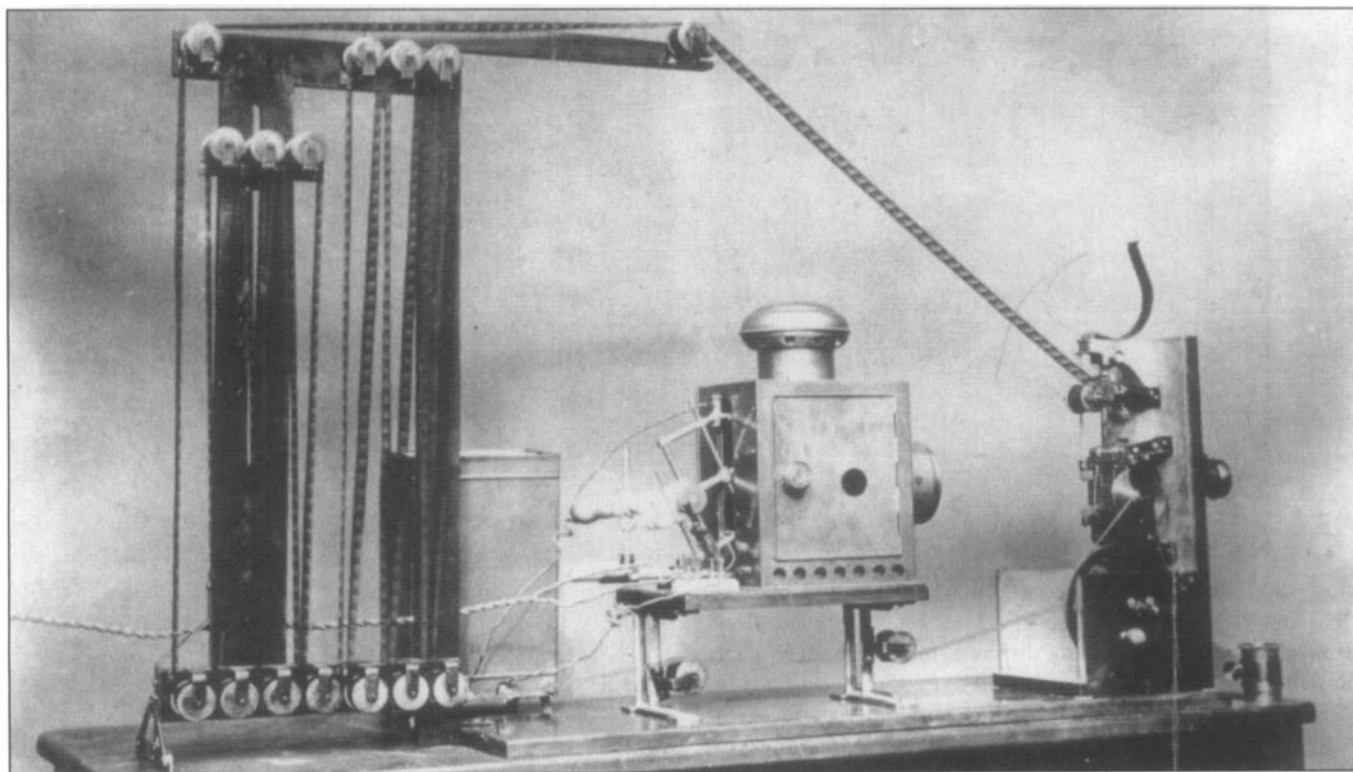


Fig. CWC 2. Edison 1897 Kinetoscope Spool Bank Projector.

British Amateur Television Club, U.K.

A total of over fifty television cameras (20 to 50 years old) and other studio equipment privately owned by around half a dozen members of the club, founded in 1949. About six outside broadcast (remote pickup) trucks are also preserved. The equipment is brought out periodically for displays and some if it is available for hire by film and TV production companies. Referrals are often received from the National Museum of Photography, Film & Television which does not lend items from its collection.

Contacts:

Andrew Emmerson,
Ph: +44 1604-844130
Fax: +44 1604-821647
E-mail: midshires@cix.co.uk

Dicky Howett,
Ph: +44 1245-441811
Fax: +44 1245-442816

Paul Marshall
Ph: +44 1522-703348

Address: Inquire about location of
specific equipment.

Hours by inquiry.

Researcher: John Belton*

Classic Home Cinema Cleethorpes, England

A collection of narrow-gauge motion-picture equipment manufactured before 1960 for amateur use. On display are over 70 projectors and cameras, including 4.75mm wide screen, regular 8, super 8, 9.5, 16, 17.5, 28 and 35mm formats. The majority of the equipment is of European origin.

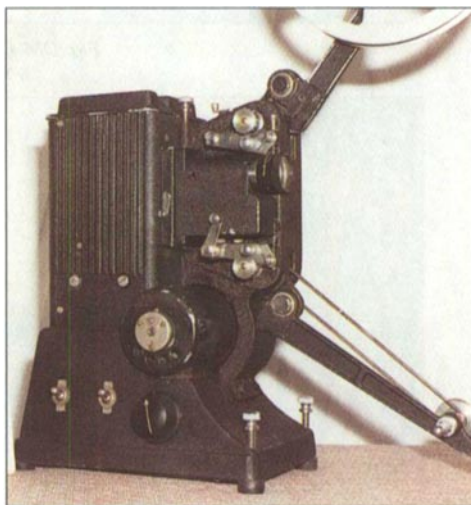


Fig. CHC1. Specto 16mm silent projector from England, ca. 1937. This projector type was also manufactured in 8 and 9.5mm models as well as combination 8/16 and 9.5/16mm models.

The 4.75mm equipment was run horizontally in the projector for a 2:1 aspect ratio. The unusual aspect of 9.5mm is that no standards were ever created. Therefore, there is a wide variety of loading mechanisms, cartridges, cassettes, spools and drive systems, all unique in themselves. Rare items include an original 9.5 Pathe Baby projector from 1923 and their original hand-cranked camera complete with accessories. Many other manufacturers are represented. The permanent display is in and adjacent to the viewing theater.

Contact: Phil Sheard

Address: 7 Taylors Avenue
Cleethorpes,
DN35 0LF England

Ph: +44 1472 603089
Fax: +44 1472 603089
(10P-7A GMT only)

Hours: 0900-2100 GMT.

Inquiries by phone or mail.

Researcher: Ed Schuller*

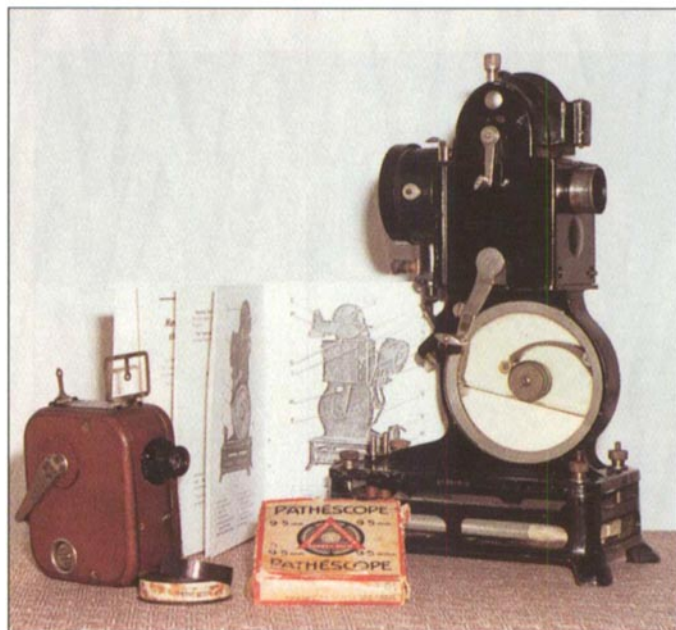


Fig. CHC 2. Original 9.5mm Pathescope Baby camera and projector. Both units are hand-cranked.



Fig. CHC 3. The rear of the Classic Home Cinema screening room with 9.5mm projectors on display.

Deutsches Museum München, Germany

The museum has a wide variety of artifacts covering the fields of film, video and audio technology. The Photography and Film collection contains about 4,000 items and the telecommunications department has about 5,000 items. The most comprehensive collection encompasses audio recorders.

Contact: Dr. Oskar Blumtritt

Address: D 80306
München, Germany

Ph: +49 089 217-9324
Fax: +49 089 217-9324

Hours: Inquire—open to the public.
Inquiries welcome by phone, fax
or mail.

Researcher: Heinz Thiele*

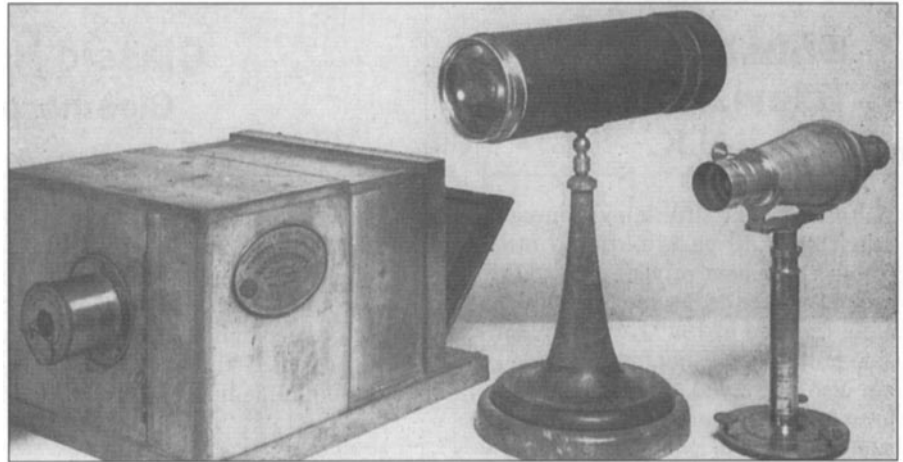


Fig. DM 1. Still cameras of Daguerre, 1839, Steinheil, 1839, and Voigtlander, 1841. Photo courtesy of Deutsches Museum, München.



Fig. DM 2. The original Cinematographe of August and Louis Lumiere, first shown to the public in 1895, was the first camera in which the technical problems of the film transport were basically solved by a claw mechanism. Used for taking, copying, and projecting pictures, this device marks the beginning of commercially successful cinematography. Photo courtesy of Deutsches Museum, München.



Fig. DM 4. In 1903, Oskar Messter, the German film pioneer, introduced his Biophon sound-on-disc device. Projector and gramophone were driven by electric motors and made to coincide by a synchronizing mechanism. Photo courtesy of Deutsches Museum, München.

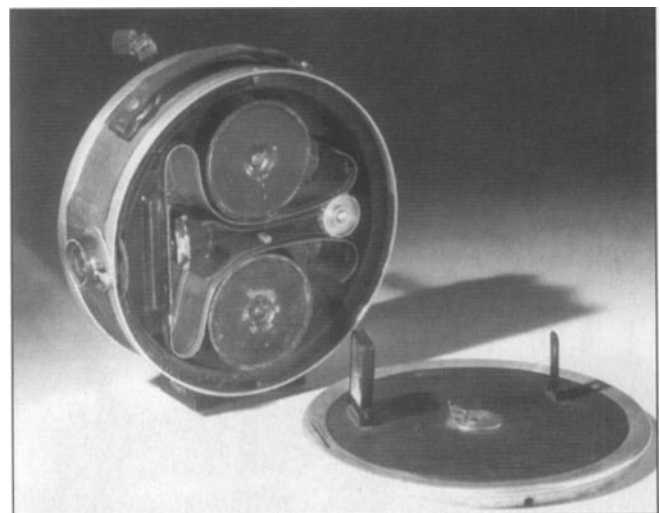


Fig. DM 3. The Kinarri 35, produced in 1925 by August Arnold and Robert Richter, marked the beginning of their production of amateur film cameras in München. The inside view shows the two daylight spools for 16mm film and the drive sprocket. Photo courtesy of Deutsches Museum, München.



Fig. DT 1. An exhibition of the early days of television. On the right, the reconstruction of the first fully electronic TV set, built by Manfred von Ardenne in 1931; on the left, the mechanical Televisor of John Logie Baird (1930); in the center, original parts from the TV laboratory of von Ardenne. Photo courtesy of Deutsches Technikmuseum, Berlin.

A collection of early and modern television equipment, including parts of Manfred von Ardenne's fully-electronic TV set (ca. 1930), Walter Bruch's first PAL set, pickup tubes, receivers and cameras of the pre- and post-war periods. The collection also includes all kinds of vacuum tubes, from the Lieben tube up to modern transmitting tubes, about 1,300 radio receivers and a nearly complete collection of German magnetophone developments. Archives include a complete AEG-Telefunken archive with a wide range of devices and equipment, as well as the former Ariel collection with historical film and cinema equipment. Hands-on displays, restaurant, book store and general and special tours (in English, French and German) are available.

Contacts: Joseph Hoppe (Collections)
 Jörg Schmalfuß (Archives)
 Address: Deutsches Technikmuseum Berlin
 Trebbiner Str. 9
 D-10963 Berlin, Germany
 Ph: +49 030 254-84-0 (Main)
 +49 030 254-84-133 (Collections)
 +49 030 254-84-133 (Archives)
 +49 030 254-84-124 (Tours)
 +49 030 254-84-175
 Museum Hours: 9.00-17.30 Tu, We, Fr;
 10.00-18.00 Sa-Su.
 Archives Hours: 9.00-17.00 Th.
 Tours: By appointment, 10.00-14.00.
 Inquiries by phone, fax or mail.
 Researcher: Heinz Thiele*

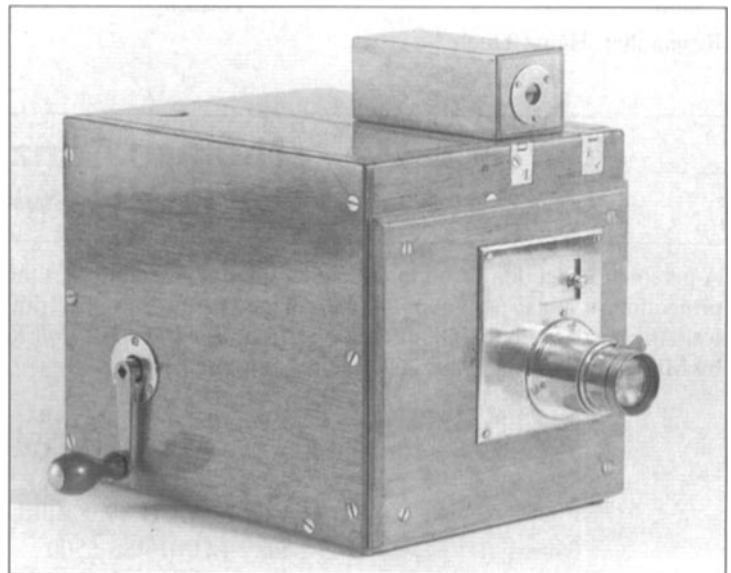


Fig. DT 2. Birtac Camera (1898). The world's first 17.5mm cine camera by Birt Acres of London, England. It exposed one-half the width of Edison's 35mm raw stock Photo courtesy of Deutsches Technikmuseum, Berlin.

Film Museum Potsdam, Germany

The collection includes a wide variety of film and motion picture equipment covering all areas of production, post-production and exhibition in all professional and amateur formats. Emphasis is on equipment produced in Germany as well as that used in the DEFA Studios. Manufacturers represented include Pathe, Debrrie, Eclair, Messter, Zeiss Ikon, Bauer, Geyer and Liesegang. The most unique item is the Bioskop projector by Max Skladanowsky, used at the first German cinema show on November 1, 1895 in the Wintergarten in Berlin. At present there is no formal exhibit but all artifacts are available for viewing.

Contact: Christian Ilgner

Address:

Filmmuseum Potsdam Archive
Pappelallee 20
14469 Potsdam, Germany

Ph: +49 331 567-0416

Fax: +49 331 567-0420

E-mail:

<http://www.brandenburg.de/land/mwfk/kultur/deutsch/filmmuseum>

Museum: filmmuse@brandenburg.de

Archives: marstall@brandenburg.de

Hours: By appointment.

Inquiries welcome by fax, phone, or mail.

Researcher: Heinz Thiele*

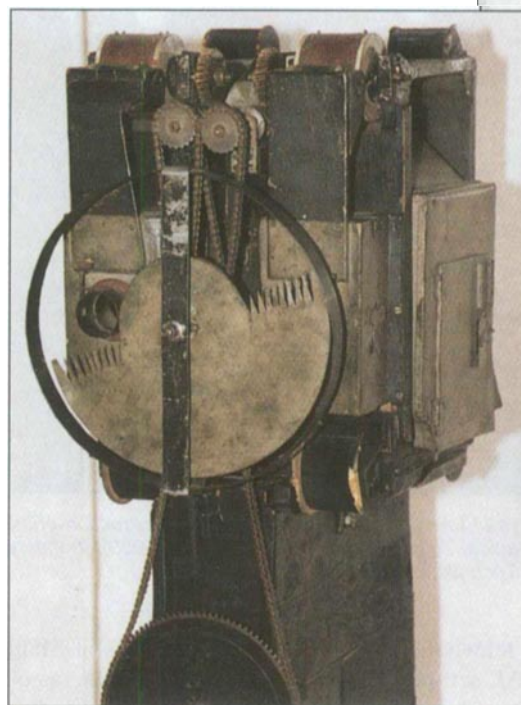


Fig. FMP 2. Closeup of Bioskop projector mechanism. Note serrated edges of shutter. Photo courtesy of Film Museum, Potsdam.



Fig. FMP 1. The Bioskop projector by Max Skladanowsky (1895) is a dual-head projector designed for alternate projection of two strips of film at a rate of 16 frames/sec. Photo courtesy of Film Museum, Potsdam.

Thomas Ganz Collection Zurich, Switzerland

A personal collection of important scientific documentation of the pre-history and history of optics, photography, cinema and projection. It consists of about 4,000 objects dating from the 16th to 20th century. Also included are related books and graphics. An illustrated book about the collection, titled *Die Welt im Kasten (The World in a Box)*, published in 1994, was written by Mr. Ganz. An English translation is being prepared.

Contact: Thomas Ganz

Address: AV Ganz AG
Seestr. 259
CH-8038 Zürich, Switzerland

Ph: +41 01 485-5500

Fax: +41 01 485-5599

Inquiries welcome by fax, phone, or mail

Researcher: Ed Schuller*

Movie Making Museum of Australia

The collection is a complete cross-section of filmmaking equipment, all donated by members of the Australian film industry. Notable are a 35mm French SEPT camera from 1923, a 16mm Mitchell and a 16mm high-speed Wollensak Fastax camera. Also included are many film editing machines, beginning with 16mm hand-cranked viewers and ending with 8-plate flatbeds. There are sound dubbers, various synchronizing systems, sound booms, film printers, projectors, dolly cranes, lights, and 8mm and 9.5mm cameras and projectors.

Contact: Paul Bushby, Manager

Address: 44A St. Albans Road
Schofields, 2762 NSW,
Australia

Ph: +61 02 96274414

Open to the public

Inquiries welcome.

Researcher: Ed Schuller*

National Museum of Photography, Film and Television Bradford, Yorkshire, U.K.

Great Britain's largest collection of cameras, containing most types of British-made TV cameras dating back to the Emitron of 1936, as well as Baird's intermediate film process camera of 1935 (rediscovered in 1996 in a deceased film buff's garage). Pre- and post-war receivers, many on display, but others can be made available for inspection.

Contact: John Trenouth, Curator of TV

Address: Prince's View
Bradford, Yorkshire,
BD5 OTR, U.K.

Ph: +44 1274-727488

Fax: +44 1274-723155

Hours: Tue-Sun 10:30 - 18:00.

Inquiries welcome.

Researcher: Fred Remley*

Provincial Museum voor Fotografie Antwerp, Belgium

The Provincial Museum voor Fotografie (Provincial Museum of Photography) uses photographs, equipment and other artifacts and documents to illustrate the history of still and motion-picture photography. Established in 1986, the collection contains a photographic record of the 1851 London World's Fair, a portable developing cabinet, Dubroni cameras and an automatic stereoscope from 1905.

Contact: Museum Director

Address: Waalsekaai 47
2000 Antwerp, Belgium

Ph: +32 3 216 2211

Fax: +32 3 248 5228

Email: <http://www.trabel.com/antwerp-fotografie.htm>

Hours: Daily 10A-5P. Free admission.

Inquiries welcome by phone, fax, mail.

Researcher: Carlos V. Girod Jr., P.E.*

David Samuelson Collection London, England

This collection, formerly assembled for Samuelson Film Service Ltd. is now on loan to the MOMI Museum in London. Among the cine equipment is the Chretien Hypergonar camera lens with which the first CinemaScope movie, *The Robe*, was photographed. The first Arriflex camera (No. 500) and a Cooke-Bell & Howell zoom lens from 1932 are also notable. The collection includes pertinent rare books from the 17th through 20th centuries and pre-cinema artifacts.

Contact: David W. Samuelson

Address: 7, Montague Mews West
London, W1H 1TF, U.K.

Ph: +44 (0) 171 262 4120

Fax: +44 (0) 171 724 4025

E-mail: 100721,1165@compuserve.com

Hours by inquiry.

Inquiries by phone, fax, post, e-mail.

Researcher: Ed Schuller*

Technische Sammlungen der Stadt Dresden, Germany

Movie cameras, especially those produced in Dresden. Mechanical musical instruments beginning with music boxes and ending with electronic synthesizers. Included are metal perforated discs, metal and wax cylinders, paper rolls and other devices to control mechanical pianos and orchestras, such as a Popper Orchestrion, audio tape recorders, GDR television receivers, radio receivers from the 1920s to the 1960s including the Dresden firms of Koch & Sterzel, Sachsenwerk Dresden, Mende and Funkwerk Dresden.

Contacts: Helmut Lindner
Johannes Paul

Address: Junghansstrasse 1-3,
01277 Dresden, Germany

Ph: +49 351 312 2293
Fax: +49 351 312 2459

Hours: By inquiry.
Inquiries welcome.

Researcher: Heinz Thiele*

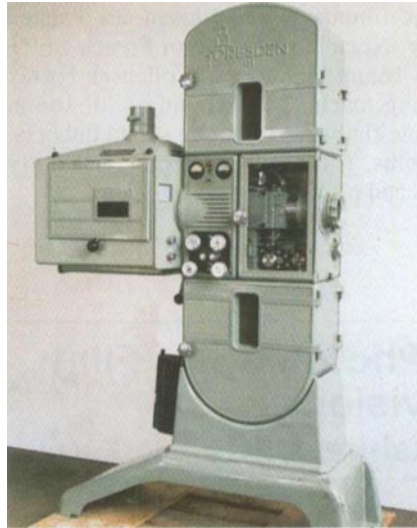


Fig. TS 1. Dresden D1 VEB. Zeiss Ikon Dresden 1953. Sound and image projector for 35mm film. The tradition of the Dresdener cinema projector begins here with the first projector built as a construction kit, with all operational parts completely and separately housed. Photo courtesy of Technische Sammlungen, Dresden.

Teknisk Museum Aalborg, Denmark

A permanent collection of television, radio and communications equipment of European, especially Scandinavian, manufacture.

Contact: Peter Haagen

Address: Riihimaekivej 6A
DK-9200 Aalborg SV
Denmark

Ph: +45 98183711

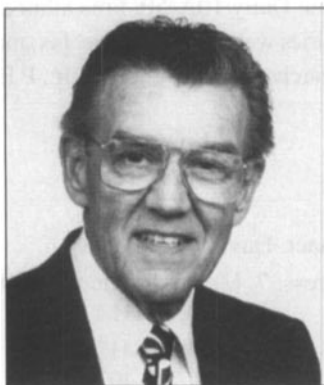
E-mail: haagen@post6.tele.dk

Inquiries welcome.

Researcher: Fred Remley*

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