INTERNATIONAL ASSOCIATION OF PANORAMIC PHOTOGRAPHERS

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Reston, VA

Orlando, FL

Seattle,WA



Chicago skyline by Tom Yanul was taken with one of his self-built swing lens panoramic cameras.

Swing Lens Panorams

This issue of the IAPP Newsletter is devoted to swing-lens panoramic cameras. Although "limited" to views of less than 180°, and usually 120° to 150°, swing-lens cameras have several advantages over 360° cameras. Most importantly, it is relatively simple to design and build a camera with a rotating lens and a stationary curved film surface. A full-rotational 360° camera requires both a moving lens and a moving film plane, which is harder to engineer. Also, in the real world, there are more good 120° views than there are 360° views.

Although by no means a complete survey of swing lens cameras, this issue has articles by IAPP members on four such cameras:

Al-Vista Panoramic Cameras

Osborne Photo-Recording Transit

Yanul's Panorams

Russian Horizont

New F8 Widelux: Demand Exceeds Supply

By John Stamets

Panon Camera Co. in Tokyo is making a new Model F8 Widelux which is almost identical to the F7. The F7 is no longer being produced. However, production of the new F8 is proceeding slowly at this time, while demand for the swing-lens 35mm panoramic camera has skyrocketed. This has led to a "Widelux shortage" with good used F7's commanding top prices, if you can find one. Adorama, the official USA importer in New York City, is advertising the new F8 at about \$1100, but at this writing, all you can get for your money is a spot on their waiting list. Delivery has been sporadic at best, although about 15 cameras were reportedly shipped to Adorama in March.

Mr. Kubota, the Widelux export manager in Tokyo, assures us that production of the F8 will eventually get up to speed to meet the demand. Rumors that the Widelux factory had burned down or that the company's founder and president, Mr. Akatsu, had died are false. Mr. Akatsu is "very well today," says Mr. Kubota.

Manufacturing of the Widelux 1500 (for 120 size film) has also been slowed because of a

problem with the lens, but the camera is still in production. "After May production will be smoother," says Kubota.

The Widelux shortage, in both formats, is not confined to the USA. Mark Segal of Panoramic Stock Images was in Tokyo last February. He visited 12 different camera stores there and all were back-ordered. Ironically, just a few years ago, dealers like Ken Hansen in New York City and Kornelius Schorle in California had plenty of Widelux's on the shelves, but few buyers. Now that the camera is suddenly popular, they can't get them. Demand for the camera is probably being fueled by recent articles on panoramic photography in mass market photo magazines.

According to Mr. Kubota (via Mark Segal) the only major difference between the F8 and the F7 is a new 26mm lens. The gearing mechanism remains the same. Recently I had the opportunity to handle the new F8, and indeed the lens casing did appear to be different. Although the aperture range from f2.8 to f11 was the same, the markings on the aperture dial were spaced differently. Otherwise the camera appeared to be identical to the F7.

ΙΑΡΡ

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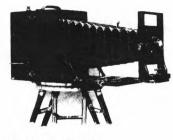
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EDITOR'S NOTE:

The IAPP Newsletter depends on the contributions of individual IAPP members. A special thanks goes out to all recent contributors, including writers Eric Beggs, Mike Hanemann, Rainer Lampinen, Robert J. Lang, Bill McBride, Mark and Doug Segal, Barrie Smith and Tom Yanul.

After two consecutive "16-pagers," I have only a few stories left in the wings, and about ten ideas. If you have a good story idea but don't want to write it, send me the information and I'll take it from there. Anything concerning panoramic and wideangle photography is welcomed, including exhibition announcements, new product reviews, self-made cameras, interesting assignments, panoramic books or other publications, historical panoramas, clever techniques, etc. One area in particular that needs more coverage is the printing of Cirkut and other large format panoramic images.

For the July 1989 issue, I need the materials by May or early June. Thanks in advance, and happy shooting.

- John Stamets

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Ads & Notices

IAPP members are entitled to free classified ads. Send to: IAPP Newsletter, John Stamets, 403 14th Ave. E. #31, Seattle, WA 98112. USA.

Globuscope Users Group: If you own one of these 360° 35mm cameras and are interested in networking with other Globuscope users, contact Everen T. Brown, 376 SW Temple, Salt Lake City, Utah 84101. 801-364-2642.

For Sale: Cirkut #8 Outfit, complete, good condition. Contact Bob Rickert, 13 Northway Dr., Huntington, IN 46750. 219-356-3679.

For Sale: Cirkut #8 Outfit including camera front and back, ground glass, lens, three gears and tripod. All in working condition. Missing the ring gear and turntable. \$1000 plus UPS. Myron Wright, 13720 Karen St., Anchorage, AK 99515. 907-345-6014.

For Sale: Hulcherama with accessories. \$3500. Ray Malinowski. 218 N. Spring St., Pensacola, FL 32501. 904-432-7558.

Wanted: New or used Widelux F-7. Call David Watersun collect at 808-879-3317 or 808-870-2774 (Hawaii).

Wanted: Used Widelux's. Contact Bruce Byall, 347 1/2 Sixth St. "A", Venice, CA 90291. 213-399-4029.

Wanted: Sinar cameras, Cirkut #8 or #10 tripod heads, Apo Computer and Apo Kyvvytar lenses, Hypergon lens, Aircraft Torpedo camera or B&J panoramic camera rollbacks, panoramic conversion kit for Sinar camera. Cash or trade. Glenn Evans 312-761-6512 or 312-761-3302. Glennview, 7729 N. Ashland, Chicago, IL 60626.

Wanted: Clean Cirkut #10 film boxes with foil envelopes. Need up to 100 boxes for storage of my exposed negatives. Will pay \$1.00 for each box with envelope. Myron Wright, 13720 Karen St., Anchorage, AK 99515. 907-345-6014.

Wanted: Cirkut No.16. Contact James D. Johnson, 1N 740 Burr Oak Rd., West Chicago, IL 60185.

Coming Soon: 100' rolls of 10" Ilford HP-5 film. Contact Doug Brown in Calgary, Alberta at 403-295-0325.

All-Widelux book: "Portrait of a Market" has 73 b&w Widelux photos of Seattle's Pike Place Market. For a signed copy, send \$18.50 to: John Stamets, 403 14th Ave. E. #31, Seattle, WA 98112.



Jeff Bridges after a long day of filming in Seattle. Photo by John Stamets.

The Wide Wide World of Hollywood

By John Stamets

Jeff Bridges, the Hollywood actor, is a Widelux freak! Ever since his wife bought him an F7 about 13 years ago, he has been snapping away backstage on the sets of the films he's played in. He has produced two all-Widelux books on the making of "Star Man" and "Tucker: The Man and His Dream." These books, published in limited-editions of about 200 each, were intended as thank-you gifts to members of the cast and film crew.

Recently I had a chance to meet with Bridges in Seattle during the filming of his latest movie: "The Fabulous Baker Boys" starring himself, his brother Beau and Michelle Pfeiffer. Scheduled for release later this year, the film is about a washed-up piano duo playing the barrooms of Seattle. Although he modestly claims that the Widelux is "just a snapshot camera for me," Jeff Bridges is clearly skilled with the camera, and especially at capturing candid moments behind the scenes. He never uses a light meter, but instead relies on his intuition or a light reading from the crew.

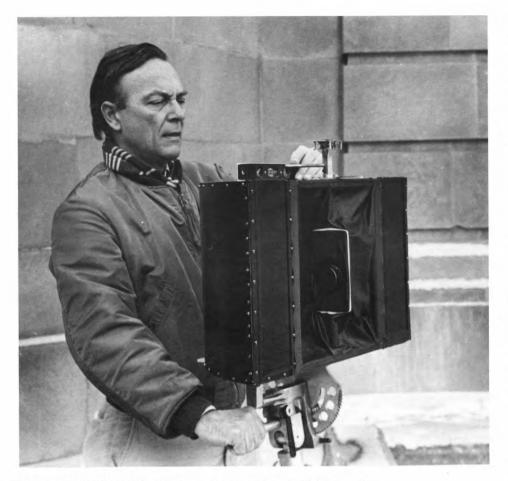
In The Making of Tucker: the Man and his Dream there are 47 black & white Widelux photographs. Ten of these are "double portraits" of people ranging from his father Lloyd Bridges, to director Francis Coppola, to the film technicians. To make these pictures Jeff suddenly turns the camera halfway through a 1/15 second exposure, and at the same time the subject switches from a tragic to comic expression, or vice versa. Fun stuff. On Valentine's Day 1989 in Seattle, his wife gave him a new F8 Widelux. "Smooth as butter," says Jeff about the new camera, which he expects to use to make another book about the making of "The Fabulous Baker Boys."

Although he has thought about going national with his photography, he has so far dismissed it as "a lot of trouble." He has had plenty of exposure as a movie star, and I got a strong sense that his Widelux "snapshots" were just that: a personal record of his friends and all the people he has worked with throughout his career.

He has exhibited his photography only once, in Livingston, Montana.



From Jeff Bridges' book: "The Making of Tucker: The Man and His Dream."



The author with his 8.25" swing lens panoram. Photo by John Lersch.

BIG SHOT PANORAMS

By Tom Yanul

Although my cameras are roughly based on the ones built by George R. Lawrence in Chicago from about 1902 to 1910, mine. Lawrence's, the Kodak Panoram and the Al-Vista all owe their allegiance and basic design to Friedrich von Martens, a Frenchman of German heritage whose curved plate daguerreotype panoram is certainly the first of its type; that is, the swing lens panoram. A nice graphic of the von Martens camera can be found in the book "The Camera" in the Time-Life series. Other swing lens landmarks include the Moessard Cylindrograph of 1884, the Star Swing Lens Panoram of New York City, and of course Lawrence's cameras which were built for film sizes as large as 24" x 96", probably the largest ever made. Although none apparently exist today, there are ads showing a Scovill Panoram, stating that one model could take a photo 18" x 48". Undoubtedly many other swing lens panorams, like mine and Lawrence's, have been built by and for individuals, but were never mass produced for the marketplace.

The author's address is: 3536 W.59th St., Chicago, IL 60629. Tel. 312-434-1802. As for my own panorams, I began constructing the first prototype after returning home from the 1985 IAPP conference in Orlando, Florida. By June or July I had an operating prototype, but it was not for another six months that I had what I would call a modestly successful swing lens camera.

Today I have four such cameras (plus the original prototype) referred to by their lens focal lengths: 7", 8.25", 9.5" and 12". The 7" model was built for 10" wide color film, whereas the others can take both 10" color film and 12" wide b&w film. Construction is of aluminum, leather and multi-layered Swedish plywood.

The 7" model takes a maximum length of 20" of film, covering a maximum horizontal angle of 150°. Although the other cameras can carry longer lengths of film with a horizontal coverage of almost 150°, I keep the film length in these cameras to 20" because of the cost of printing and handling. This gives me about 140° horizontally on the 8.25" model, 120° on the 9.5" model, and 95° the on the 12" model. On this basis I simply pick and choose the proper camera for the particular job. Initially the prototype camera was springpowered with an industrial clock-spring motor. This was changed to a D.C. electric motor which operated over a 3 to 18 volt range for speed control. Neither motor proved to be entirely successful because of occasional banding problems. I could never count on getting a banding-free photo. An additional problem of major consequence was the leather over the face of the camera. The leather must exclude light and allow the lens to turn easily. The original leather covering which worked fine in the warm summer was no longer adequate in the cold winter when it got stiff. This led to a long and tedious trialand-error testing of man-made materials and other forms of leather. Eventually I found a successful leather which I continue to use today.

Finding parts and machinery to use in the construction is a never-ending problem. It's simply too expensive to custom build such components. And when you find a ready-made motor, it is generally not available in quantity because it is usually a surplus item that is no longer made. This is a continuous headache for the small-quantity manufacturer.

The cameras as built now are all powered with spring industrial timers, but of a different kind than originally used. The effective shutter speeds, which are dependent on slit width and motor speed, range from 1/50 to 1/75 second. For interior work, I use slow speed electric motors giving effective shutter speeds from 1/2 sec. to 4 sec., depending on the camera and motor. Although the slit width cannot be changed instantly, it can be done rather simply in about 15 minutes when the camera is unloaded.

Although there are small changes in each consecutive camera that I build, the basics are the same. And since each camera is made for a different focal length lens, no two cameras can be built at the same time with similar dimensions. Each is very much a "custom" manufacturing job.

My cameras were designed and built as one-shot affairs simply because introducing roll film aspects requires much more complex engineering and adds greatly to the cost of production. The limitations of a one-shot camera are a trade-off for building a camera that is very much attuned to film tolerance and sharpness, something that I wanted most of all.

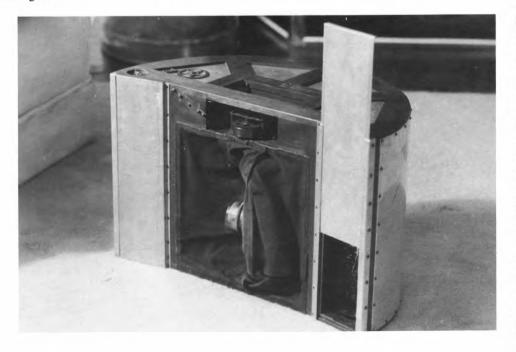
The cameras were also designed for shooting from rooftops in a large city. The focus would not be a problem since most of the subject matter is at least 50 to 75 feet away. Using high speed film (ASA 400) gives the advantage of small f-stops, again insuring adequate depth of field.



Except for the 7" model, the cameras all have the lenses offset below center. This gives a "look down" mode when used in the regular position. When I'm shooting from near or on the ground, I turn the camera upside down to achieve a "look up" position.

Interior shots are basically limited to large spaces where adequate depth of field can prevail when using lenses of 7" to 12" focal length.

For good landscape work, I realize that even these focal lengths are too short, so I have begun constructing a panoram with a 21" lens. This camera will have two focusing areas: one at infinity and the other at 25 ft, which will be useful for photographing groups of people arranged in an arc. The two focusing distances will be achieved by using two different curved film plates made for the correct radius of each distance.



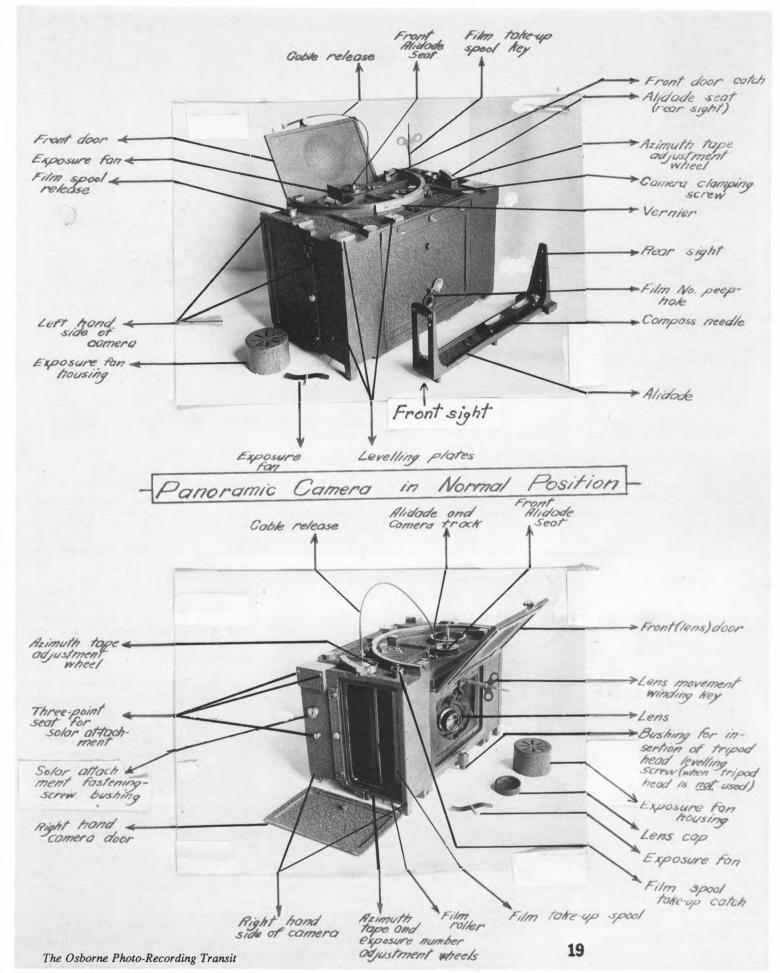
Enlargements

This is truly an important factor in my work. If you have a very high-quality image, one naturally wants to enlarge it to really enjoy the detail without a magnifying glass. Direct panoramic enlarging is a possibility if you keep the negative size to 20" or less. In Chicago there is the Arrow Photo Company which possesses a 1930's era Deardorf enlarger capable of handling a 20" black & white negative. This is the reason I limit my film sizes to 20". The results are truly fascinating in a 6 or 8 ft direct enlargement.

For color one must go south to Fort Lauderdale, Florida where Aerial Photos International can handle a 20" color negative with impressive results. There is also sectional color printing being done by Rodger Billstone at Skyline Lab in Mannassas, Virginia. Again, impressive results and a fine panoramic lab in general. I know that there are other labs doing Cirkut color printing, but since I am rarely involved in that area, I will leave it to others to speak on that subject.

As far as history goes, the future does not bode well for all this color we are shooting. The negatives and prints will be gone in time. Unless the photo has been printed with certain inks in a magazine or poster, or separations made, there just won't be much color left from the 1980s to see in 100 years.

-cont. on p. 8





The Osborne Photo Recording Transit

By Mike Hanemann

The Osborne Photo Recording Transit is a rare and unusual panoramic camera. It combines a swinging lens camera for 6" roll film with the precision siting of a surveyor's transit. It was designed in 1931-32 by W.B. Osborne, a professional forester and an official of the USDA Forest Service, and was built in Portland, Oregon by Lupold-Volpel and Company. The camera was designed to provide "Seen Area" photographs that were accurately tied to Forest Service maps. This allowed fire lookouts to pinpoint fires and to communicate their findings with a higher degree of accuracy. It placed the same information in the hands of fire dispatchers and on-the-ground fire fighters.

The camera had its start within the development of a forest fire detection system. The idea was to provide fire lookouts with pin-point accurate views of the scene from their lookout, with azimuth numbers (horizontal angles in one degree markings) that could be read and translated quickly to topographic maps.

First, photographs were taken from the lookout on a clear day. The azimuth in degrees, relative to the orientation of the view, was imprinted on each negative at the time of exposure, via an adjustable band built into the camera.

The author is an IAPP member, camera collector, and USDA Forest Service employee. Any additional information, including the whereabouts of the remaining cameras, would be much appreciated. Copies of blue prints and an operational manual are available from the author for \$3.50 postpaid, or \$2 for manual only or blue prints only. Contact Mike Hanemann, P.O. Box 22374, Milwaukie, OR 97222. After the film was developed, the location and level line were added. The photos (6x14" contact prints) were then taken back to the lookout and mounted for use, oriented to the forest base and topographic maps of the "seen area" in each photograph. The fire dispatchers, in contact with the lookout by radio, were also provided with a set of contact prints, further facilitating communication.

At one lookout in Oregon, the photos were enlarged onto linen and folded out for use like a large map.

The major use of the camera occurred in the period from delivery in 1932 through 1935. There was a brief flurry of activity in 1938-39 to cover new lookouts. After this time, only sporadic uses of the camera have been discovered. Most of the negatives produced are in the National Archives, where prints can be purchased.

Although the Osborne cameras were not used much after the initial photos were taken, this visual panoramic location technique was considered successful, and the system remained in use in at least five Western States at least through the late 1950s. That's when aerial surveillance and other technologies began to eliminate the need for so many manned lookouts.

Tech Specs

The camera takes a 6x14" total image, including the azimuth scale. The usable image within the azimuth scale measures $4.75 \times 13"$ and subtends just over 120° horizontally (see photo above). The lens is a 6" Goertz Aerostar f6.8. Although nominally 6" in focal length, the exact focal length is stated quite accurately on each camera, such as 5.887", 5.917" and 5.986", on the samples I have examined. The lens movement is by clock motor with the speed regulated by metal fans. Effective shutter speeds were quite slow, 1/5 second and longer. When the camera was built, the common 6" roll film was Aero Type 2, and later infared.

The camera is constructed of cast aluminum with brass fittings and bushings. The lens mantle is of chamois leather. The front has a hinged door, which protects the lens and acts as a lens shade. The door is secured by a brass finger bolt.

To facilitate loading film, cleaning and maintenance, the camera back and both sides have removable panels, held by slide locks. Included with the camera were: four exposure fans and removable metal housing, a three-piece alidade (detachable), a wind-rewind key, a level accurate to one minute, and several small tools. All of this was packed in a wood case measuring 17.5" x 9.5" x 10.5".

Tripod

The camera came with a tripod with the head and legs in separate wooden cases. The head has a movable 360° azimuth ring etched in 1° increments. It, too, is cast aluminum with brass fittings, including four leveling screws. It has fittings for legs and for direct fastening to a table or other fixtures. When not in use, the tripod head is protected by a heavy cast-aluminum cover. The wooden box for the head measures $11.5 \times 11.5 \times 7''$ deep.

The tripod legs are heavy hard wood measuring 35" closed and 54" at maximum extension in two sections. The wooden box for the tripods measures 37 x 7 x 6.5", bringing the total camera package to about 75 pounds.

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IAPP Shooters at Presidential Inauguration

By John Stamets

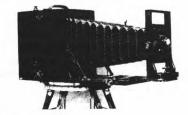
Cirkut photography of the presidential inaugaration ceremony has become something of a tradition in its own right. This year the swearing-in of George Bush was photographed with Cirkut No. 10's by IAPP members Abbas Hadjshirmohammadi of Reston, VA and Tom Schwab of Houston, TX.

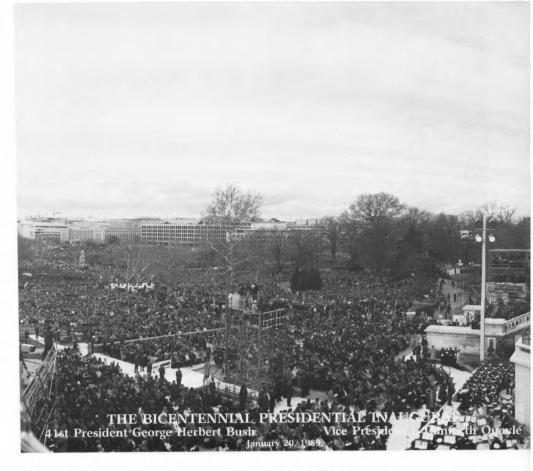
Despite the best laid plans after a dozen meetings with the Inauguration Committee, Abbas and Tom found that the day of the shoot was a logistical nightmare. With most of the streets barricaded or jammed with traffic on the morning of the ceremony, Abbas and Tom ended up hiking 11 blocks around the capitol to get to their access gate. That wouldn't be so bad, except they were carrying two Cirkut No. 10's, two tripods, an 8 ft ladder and assorted gear!

Exhausted, but on time, Abbas took up a position on the capitol itself above the president's podium, whereas Tom staked out a spot with the standing spectators. Tom's plan was to set the camera up above the crowd and take the picture while standing on the ladder. But despite their pre-arranged agreement, the Secret Service disallowed the ladder. That meant Tom had only one "blind" shot, and luckily it turned out.

Meanwhile, Abbas got a good shot (right) with Bush at the podium, and then moved the camera to a second position. Once again, despite the plan, the Secret Service moved in and prevented him from setting up for the second shot. The net result was only one shot apiece for Abbas and Tom.

That was the bad news. From then on, their plan worked. Despite the traffic, they rushed the 10" Vericolor film to a processor, and three hours later they had delivered 65 prints to the 10 different inauguration ballrooms scattered around Washington D.C. By the end of the evening, they had taken over 500 orders at \$80 apiece. Photos in gold-leaf frames at \$200 each also sold very well. Not bad for a long day's work. Would he do it again? "Definitely!" says Abbas.





BIG SHOT PANORAMS - from p.5

I realize that most of us can't do much about that problem. But just keep in mind that shooting some black & whites might not be a bad idea for posterity's sake.

Have Panoram, Will Travel

Although the two smaller cameras fit under an airplane seat or in the overhead compartment, it is nonetheless a pain to travel in this manner. Late in 1988 I acquired a used travel van with the back part transformed into a darkroom and storage compartment. Here I can carry three panorams and all my film and supplies, as well as my big tripods and ladder. Working from the roof of the van gives me a vantage point 11 or 12 ft from the ground.

At present I am just completing a panoramic shoot for the Chicago and Northwestern Railroad Annual Report. Traveling throughout Wisconsin, Illinois and Iowa, I photographed C&NW trains at the facilities which they service, including coal burning power plants, grain elevators, potash elevators, steel mills and other installations. The long horizontal configuration of the trains and plant sites is something which the panoram takes in quite well. I can provide a very high quality image over the 120° to 150° area of coverage.

Other clients over the past few years have included the Quaker Oats Company in

Chicago, Commonwealth Edison Company, the Chicago City Planning Department, and various architects, developers and construction contractors. Occasionally, I shoot groups of people outside. Now that I have a travel van, I am also beginning to shoot landscapes for the stock photo market.

Areas of shooting to be wooed in the future include more power plants, mining and mining equipment manufacturers, and large manufacturing plants (steel, cement, quarrying etc.). There is a large market that remains untapped from the panoramic standpoint. It's just a matter of chasing it.

Conclusions

One aspect of all cameras, panoramic or not, is that a particular camera does a particular job best. Manufacturers are constantly attempting to create a camera that will do more things, better and often cheaper. But if one wants the ultimate quality in both image size and function, one must choose a particular type of camera; i.e. a large format view camera.

Where speed and versatility are most important, one might choose a 2.25" or 35mm camera. But for certain types of horizontal imagery, the panoram is the camera of choice. It is my belief that that the swing lens panoram, with its roughly 2:1 image ratio, is far better suited to the commercial market, especially publishing. Magazine pages are usually vertically



oriented, often 8.5" x 11". The 2:1 ratio is well within acceptable boundaries to fit that format across the page, and on occasion, across the gutter to include both pages. It is also a far better format to wrap around as a front-back cover photo. The problem is that most people involved in layout are just not attuned to the existence of panoramic formats. Thus, photographers who use the panoramic format must be constantly attempting to educate and introduce their format style to the professional and public as well.

Sometimes architects or developers will object to the panoramic format because they want a photo that shows only their building and not the surroundings. On the other hand, real estate magazines and newspapers may be more interested in showing the surroundings of a new building in order to make a point. There is no doubt that in the public's eye, the panoramic photograph is of interest because of the large amount information contained therein. The viewer can enjoy the visual wanderings offered in such an image. It is up to us, as panoramic producers, to push this form of imagery to the general public so our clients will more readily accept it. I believe the IAPP is helping in this respect, especially in the networking aspects which allow us to inform each other of events and technologies to advance the cause, whether it be the artistic or business end of panoramic photography.

OSBORNE CAMERA

- from p. 7

Each camera has a small brass name plate which states: U.S. FOREST SERVICE, Photo Recording Transit # (or letter), lens #, focal length (to 3 decimal places), back focal length, Lupold-Volpel & Co., Portland, Oregon.

How Many Are There?

The records on this camera are very sketchy. The Lupold Company, which today makes binoculars and rifle scopes, has no records for this camera, and the U.S. Forest Service purchase records from the 1930's are long gone.

The Osborne family estimates that 10 or 12 cameras were made. Former Forest Service employees who were involved with the program in 1932-35 recall that six were made for the Forest Service and one for the Park Service.

I have located seven of these cameras: five with the USDA Forest Service and two in private hands. One of the Forest Service cameras is #10. Thus, there are likely to be three to five more cameras that have not been accounted for. It is believed that at least two of these cameras were sold at a government surplus auction in the 1950s. Today they could be anywhere.

The camera has been mentioned in "Fire Lookouts of the Northwest" by Ray Kresek, 1984; and in a small monograph: "We Climbed the Highest Mountains" by Albert Arnst, 1985. Blue prints of the camera and an operational manual written by W.B. Osborne, dated 1945, are available for a small photo copy cost (see p. 7).

ODDS 'N ENDS

Photo District News (Feb. '89) did a nice piece on IAPP President David Paskin titled "Paskin's Passion for Cirkut Cameras." The story goes into some detail about how David restores Cirkut No. 10's Finnish panoramic photographer **Rainer** Lampinen field-tested the "new improved" model of the Round Shot 35/35 at the World Ski Championships in Lahti, Finland in February.... In early 1989 Jane Alden Stevens exhibited her panoramic "People in Environments" at the Photography Gallery, Ithaca College, Ithaca, NY The Design Council (London) bestowed one of its prestigious British Design Awards on the Trajan Portable Assembly Staging. Trajan Staging for large group photography (see Fall '88 IAPP Newsletter) is the brainchild of Ben Harris. Chairman of Gillman & Soame, Ltd., Oxford An all-Widelux "Year in the Life of the Kingdome" by John Stamets filled six pages in the Feb. '89 issue of Pacific Northwest Photographer David Yost jammed 2.5 miles of New York's Fifth Avenue into a single spectacular poster! See p. 9 of the April '89 issue of American Photographer.



Good for collecting, not for shooting Russian Horizont

By Rainer Lampinen

Have you ever driven a tractor? If not, you should try to photograph with the Russian panoramic camera, the Horizont; it will give the same feeling.

Historically speaking, Russians have always loved spectacular open-space places and wide views. Tsarina of Russia, wife of Nicholas II, ardently used her Eastman Kodak No.4 Panoram. No wonder then, that later on in 1960s, the Russians developed their own panoramic camera.

The Horizont operates on the same principle as the Widelux, but it is not a copy of that. Like the Widelux, the Horizont has a revolving lens, curved film plane, and open slit focal plane shutter. It takes 35mm film, giving 21 frames on a normal 36-frame roll. The actual image area is $24 \times 57mm$, compared to $24 \times 59mm$ in the Widelux F7. The Horizont's field of coverage is 130° by diagonal measurement, compared to 140° on the Widelux.

The frame counter on the Horizont is very simple, but does not automatically return to zero when the back is opened, as on the Widelux. You must manually return the film counter to zero by turning the knob as many times as needed. The aluminum film-winding knob is weak and will be easily damaged when the film gets tangled, as it often happens.

The 28mm lens is fixed focused at about three meters. Apertures range from f2.8 to f16 (compared to f2.8 to f11 on the Widelux). The lens appears to be coated somehow, although not multi-coated, so I think it was

made mainly for black and white films. However, I have had relatively satisfactory results using color transparency film if I avoid shooting against the sun or if I shoot on a cloudy day. There are four original filters for the camera for use with black & white film.

The shutter dial has markings for effective exposures of 1/30, 1/60, 1/125 and 1/250 second (compared to 1/15, 1/125 and 1/250 sec. for the Widelux). At the slower shutter speeds, the lighting is not very regular, even in new cameras, so this must indicate something about the level of Soviet precision mechanics. Revolving of the drum is also irregular in cold weather.

On top of the body there are three dials within each other: the shutter speed dial, the aperture dial, and the film speed memory dial, where the marks on in DIN or GOST norms. GOST is the Soviet's system for indicating film speeds.

The most clever idea in the Soviet Horizont panoramic camera is the viewfinder. A spirit level on top of the viewfinder is also visible when looking through the viewfinder, a very useful feature. Unlike the limited Widelux viewfinder, the Horizont viewfinder gives an accurate view of the actual image that you will get.

Another good idea is the removable handgrip. It is quite good, especially for keeping your hands out of the picture! Originally the Horizont came with its own strong leather carrying case which held the handgrip as well.

When you rewind the film, you must move the viewfinder away. The rewind knob also seems to be weak. Besides the weak mechanics, the worst features of this camera are a bright film drum and too wide a slit for the shutter, both of which can cause accursed reflections on the film.

Already some years ago, the Russians realized that they cannot make a camera with moving parts, so they stopped production of the camera. Russians are not stupid.

Although the Horizont has no value in real photography, it has value as a collector's item. I have heard legendary stories about photos taken with the Horizont, but have never seen one. These stories are like fishermen's stories. That's my opinion.

CORRECTIONS

Due to an editing error, it was incorrectly reported in the Fall 1988 Newsletter that the **Round Shot 65/70** camera can take 220 film. It cannot. The camera uses only 70mm roll film. Also, the film length for a 360° view (with focus at 3m) is 41.2 cm, not 40.8 cm, which would be the film length if focused at infinity.



"Whitehouse Ruin, Canyon de Chelly", a Widelux photo by Geir Jordahl, will be shown in the Extended Image exhibit.

Contemporary Panoramic Exhibit Opens

A major panoramic exhibit will be showing at the Photo Central Gallery in Hayward, California from May 4 to June 17, 1989. Titled "The Extended Image: Contemporary American Panoramic Photography" the show will feature a single image or two from a large number panoramic photographers. Included are IAPP members George Berticevich, Geir Jordahl, John Stamets and Tom Yanul. The exhibit curator is Kate Jordahl who writes "This exhibit will show the breadth and variety possible in panoramic photography today."

The Photo Central Gallery is located in the Hayward Area Recreation District Office, 1099 "E" Street, Hayward, CA 94541. Tel. 415-537-3893.

A Chronological History of the

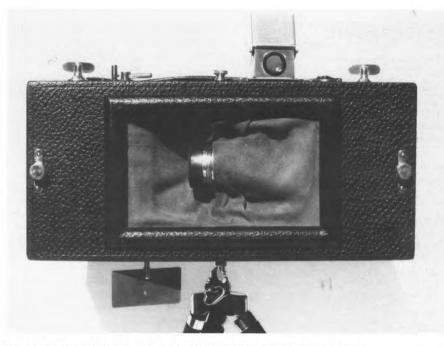
AL-VISTA PANORAMIC CAMERAS

By Bill McBride

The Al-Vista Camera is one of the most interesting mechanical panorams made in America. It was manufactured from 1898-1910 by the Multiscope & Film Company of Burlington, Wisconsin. The company of Produced Al-Vistas in at least 18 different models which ranged in film size from 2.25" roll film to 8.5" roll film. The company also marketed glass plate cameras under the Tiger and Badger names, but their main manufacturing business was the Al-Vista Panoramic Camera.

The inventor of the Al-Vista was Peter N. Angsten, born in Coblenz, Germany in 1855. While in Germany, he conceived the idea of a camera with a turret-like, springdriven lens that would turn an arc of almost 180°. The camera's angle of view would be two or three times wider than other cameras manufactured. However, Angsten was stymied because of his inability to obtain a type of film that would make the camera workable. The solution to this problem came when Eastman Kodak introduced emulsioncovered roll film.

Angsten emigrated to the United States in 1882 and settled in Chicago where he worked as a painter and decorator. In spare hours at home he put together the first working model of the Al-Vista Panoramic Camera. Taking on Charles H. Gesbeck, a Chicago photographer, as his partner, Angsten patented his original camera on September 8, 1896 (No. 567,559) and began making Al-Vistas on a small scale in Chicago.



The Model 4B Al-Vista showing speed control fan mounted on bottom .

In 1897 Leonard J. Smith, a Wisconsin industrialist, met Angsten on a Sunday afternoon while walking in Linclon Park in Chicago where he observed Angsten taking pictures with a box camera that had a moving, odd-looking nose on it. This was one of the earliest Al-Vista panoramic cameras. Smith was astounded by what the Al-Vista could do, as the camera featured a pivoting, spring-wound lens that recorded a 160° wide view on standard roll film. The astute Smith hustled back to Burlington, Wisconsin to persuade four friends to join him for the purpose of buying the Al-Vista patent and putting the camera into production. This effort blossomed into the Multiscope & Film Company, capitalized originally at \$25,000 and later boosted to \$60,000.

On September 1, 1897, the first stockholder and organizational meeting commenced in Burlington for Multiscope & Film Company which was incorporated under the laws of Wisconsin. The main office and factory were to be in Burlington with an additional office in Chicago. The five original stock subscribers were Gustave C. Rasch, the temporary chairman, W.A. Bennett, William N. Selig, Leonard J. Smith and Ed Caldwell, where each man was persuaded by Smith to put up \$4,000 for 40 shares of stock in the company.

Elected president was G.C. Rasch, a onetime local storekeeper who steered the Burlington Blanket Company, progenitor of Burlington Mills, to an international reputation for its products. Elected Vice President was W.N. Selig who was given "exclusive supervision of the machine part" of the fledgling company.

-cont. on p. 12

Below: An Al-Vista photo of L.J. Smith.



Selig was chosen for this position due to his experience from developing, in 1895, the Selig Standard Motion Picture Camera and the Selig Polyscope Motion Picture Projector. W.A. Bennett was named Secretary and Treasurer, and L.J. Smith and E. Caldwell were named Directors.

At the September 28, 1897 stockholder meeting, it was decided to have P.N. Angsten and C.H. Gesbeck assign to the company their Al-Vista Camera patent for 50 shares of the company'ys \$100 per share stock. This payment was to include all future improvements to the camera. It was voted to pay the officers of the company \$1800 for the coming year. The salaries of P.N.Angsten and C.H. Gesbeck was decided to be \$16.50 per week for the coming year. Since a deal was made, Angsten moved to Burlington to take a hand in production and to develop improvements for his camera. To manufacture the Al-Vistas Camera, the company rented space in Burlington's Linclon School, which was the first factory site.

Over the next several months, the capital stock of the company was raised from \$25,000 to \$60,000 through a stock option plan proposed by S.P. Wiley of Chicago. Also, L.J. Smith became Secretary/Treasurer, replacing W.E. Bennett.

1898

The 1898 Multiscope & Film Company catalog offered the Al-Vista Panoramic Cameras, the Tiger Plate Camera, printing frames, camera tripods and other photographic equipment. The main office and factory were listed in Burlington, Wisconsin with additional offices in Chicago and New York City.

In 1898 only one model Al-Vista Panoram was offered: the No. 4. This camera took 4" roll film which ran on curve guides inside the camera box. The lens was pivoted at its optical center, and was rotated by a cylindrical spring which was adjustable for fast or slow exposures. A lens cap was provided to shut out the light when the shutter was rotated to be cocked. The back of the lens was fitted with a flat tube through which a vertical strip of picture was exposed as the lens rotated. This model took five 180° 4x12" photographs per roll of regular 4" roll film. The camera had a spirit level, fast and slow lens swinging speeds, a film perforating punch on the left side of the camera, polished brass metal fittings and high quality leather covering. This Al-Vista did not have a carrying strap or viewfinder. The box size was 5 x 5.25 x 10.5 inches.

An advertisement shows an attractive woman hand-holding the Al-Vista No. 4, implying that the camera was easy to use without a tripod. The camera, with a rapid special double lens, was priced at \$25. For another \$5, the camera came with an "extra rapid" special double lens, detachable front and back, and different size aperture stops that were inserted in front of the lens.

The other camera offered by Multiscope in 1898 was the Tiger 4x5" plate camera, which could have been manufactured by the Western Camera Manufacturing Co., as it is similar to their 4x5" Cyclone Sr. The camera holds three double-plate holders and can be used for either vertical or horizontal pictures. Bausch & Lomb made the achromatic meniscus lens.



Figure 1. Front side of No. 4 camera showing brass speed adjustment dial. Screw on right adjusts lens rotational speed. Lens as shown is in "picture exposed" position.

The camera was equipped with the New Common-Sense Shutter, which "cannot get out of order," according to the manufacturer. The Tiger 4x5" Plate Camera was priced at \$7. Developing and printing outfits were available for both the Al-Vista and Tiger cameras.

Angsten and Gesbeck applied for another patent on May 31, 1898 for a panoramic camera similar to the 1898 No. 4 Al-Vista. This patent was awarded over six years later on December 27, 1904.

A company directors meeting was called on October 22, 1898 to establish an understanding with P.N. Angsten about the manufacturing of the cameras. L.J. Smith wanted to shut down the factory in Burlington and have the cameras made in the East. Angsten stated that he did not think this was right, and if the company moved, he would not give the company his new camera design improvements. Angsten also stated that William Schoeber of Chicago had designed several improvements for panoramic cameras, and that the company should try to interest him to give his patents to the company in exchange for stock.

On December 7, 1898 L.J. Smith wrote to Schoeber and invited him to come as soon as possible to Burlington with his improved camera. On Schoeber's panoramic camera, the lens could swing either way when taking a picture. The 1898 Al-Vista lens could swing only one way when taking a picture, so the company was eager to get Schoeber's invention patented before someone else would.

At a meeting with the company directors on December 15, 1898, Schoeber agreed to turn over all improvements and future panoramic camera improvements for eight shares of capital stock of Multiscope & Film Co. and a salary of \$2.75 per day until Angsten and Schoeber manufactured the cameras on contract. All improvements by Schoeber were to be patented at the company's expense. No patents under Schoeber's name could be found so his new camera improvements were incorporated in the panoramic camera patent granted to P.N. Angsten on April 2, 1901 (No. 671,154). The panoramic camera in this patent resembled the Al-Vista Model 4C or 5C.

1899

The company annual meeting was held in Burlington on February 1, 1899 to elect officers for the following year. The election named G.C. Rasch as President, P.N. Angsten as Vice-President, C.E. Partee (Smith's son-in-law) as Secretary, L.J. Smith as Treasurer, and Wm. Schoeber as Director.

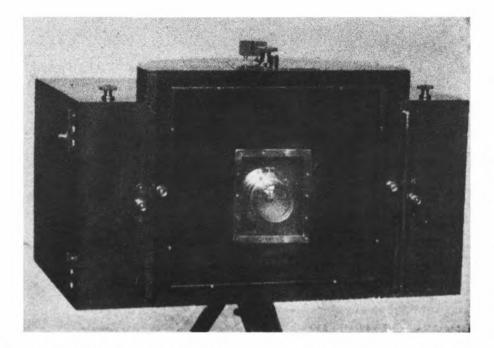


Figure 2. The 1899 Al-Vista Senior is the rarest and largest of the Al-Vistas manufactured.

For the first part of 1899, Multiscope continued to produce the No. 4 Al-Vista but added improvements, including a carrying strap and three lens travelling speeds of rapid, medium and slow, controlled by a brass dial on the front of the camera (Figure 1). The dial placed a variable amount of friction on the rotating vertical shaft as a means of controlling the speed of lens rotation. On the top center of the camera was the exposure counter which was attached to a round disk inside the camera box. As the film was pulled through, the disc rotated to indicate the number of exposures made.

They also added a new model No.4A Al-Vista in 1898. This camera was the same as the No.4 but included a revolving viewfinder, different sized stops and a short negative attachment. The No. 4A could make 4x4", 4x6", 4x8", 4x10" or 4x12" pictures using regular 4" roll film. Both of the No.4 and No.4A cameras were covered with quality leather and had polished brass metal fittings. The 1899 No. 4 was priced at \$20 and the No. 4A at \$25. The 1898 Tiger Plate Camera was retained with no changes for 1899.

By May 1899, Multiscope came out with additional panoramic cameras: the Nos. 4B, 4C, 5, 5A, 5B and 5C Al-Vistas and an Al-Vista Senior Panoramic Camera. The No.5 and 5A Al-Vistas were the same as the 1899 No.4 and 4A as previously described except that they used 5" roll film instead.

The No. 4B, No. 5B and Al-Vista Senior (Figure 2) were new mode advanced Al-Vistas with the added provision of more travelling speeds for the swinging lens. This was achieved using an external geared clockwork with differently sized air resistance fans so the speed of the lens could be varied from "snapshot" to about 30 seconds or more. By watching a clock operate, Angsten had conceived the idea of clockwork for the swinging lens, which gave a smoother and steadier motion when taking a picture.

The Nos. 4A, 5A, 4B and 5B were advertised as being "Many cameras in one and but one itself" as they could photograph five different lengths of pictures (4", 6", 8", 10" and 12"). The No.5 was priced at \$25, the No.5A at \$30, No.4B at \$30 and the No.5B at \$35.

The Nos. 4C and 5C could produce the same pictures as the Nos. 4B and 5B respectively, but also had the provision for taking pictures using standard glass plate holders, if desired. The No. 4C used 3.25×4.25 " glass plates, and the No.5C used 4x5" glass plates. For the glass plate work, both cameras were provided with an extra achromatic lens that was locked onto the camera center facing forward. Both models had built-in focusing ground glass that did not interfere with the panoramic picture abilities of the cameras. The No.4C was priced at \$40 and the 5C at \$45.

The Al-Vista Senior Panoramic Camera was made for the professional photographer and could take $8.5 \times 26"$ pictures on a 500" continuous roll of film. The catalog price was \$300 in 1899. The Senior was finely finished in rosewood, had polished brass trimmings, came with a specially ground and very fine extra-rapid rectilinear lens, and was provided with different-sized insertable f stops. This model did not sell well due to the high cost and odd film size. Only a few of these cameras were made, and production of the Senior was discontinued during 1899. None are known to exist today. The company literature also stated that even larger cameras could be built if desired. Just how many "larger cameras" were custom manufactured by Multiscope, if any, is unknown.

To handle the increasing production, Multiscope leased the Burlington Novelty Co. factory building on Kendall Street to manufacture the optical goods needed, including lenses for the cameras, surveyor's instruments, magnifying glasses, etc. In July 1899, the Al-Vista camera was awarded a Certificate of Merit at the 19th annual meeting of Photographers Association of America.

At a directors meeting on July 24, 1899 it was decided to have one man to have full management of the company's business. P.N. Angsten was given this position as the overall manager. On August 17, Mr. Reichert was also hired to manage both Burlington factories. It was also decided to approach the Bulrington Blanket Co. to repair one of their factories so Multiscope could move in to further expand their camera production.

At a special directors meeting on December 11, 1899, it was decided to discontinue the Nos. 4, 4 A, 4C, 5 and 5A models and to make the more popular Nos. 4B and 5B models smaller and more compact for the coming year. The name Al-Vista was officially trademarked (No. 33,904) by Multiscope on December 19, 1899.

1900

At the January 11, 1900 annual company meeting, the officers were re-elected, except that Wm. Schoeber apparently resigned as a company director as his name was no longer mentioned at the annual meetings.

Multiscope suffered a large setback on the night of Jan. 19, 1900 when the Kendall Street factory was gutted by a severe fire. The rear part of the building was destroyed, and most of the machinery and tools were a total loss. Twenty men had been employed here manufacturing cameras and photographic supplies. The company then established a temporary office at the Burlington Blanket Co. to handle the business in the meantime.

Following the fire, the Multiscope & Film Co. had several offers to relocate elsewhere, but president G.C. Rasch said that they preferred to remain in Burlington if suitable arrangements could be made. Pointing out the company's local annual payroll in excess of \$10,000, Rasch

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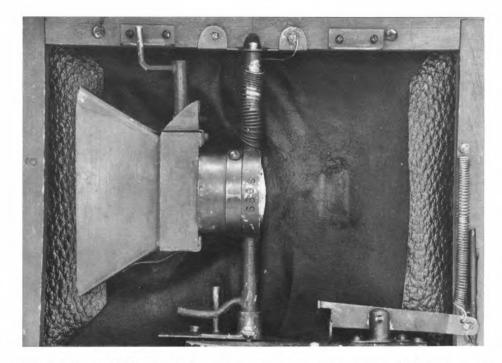


Figure 3. Typical Al-Vista swinging shutter mechanism with opening and closing exposure lever revealed. On this model the lens swings clockwise to make exposure.

convinced a goup of Burlington businessmen, formed as the Advancement Association, to build a brand new brick factory two stories high. Multiscope would first lease this new factory and then eventually buy it.

The 1900 Al-Vista Cameras were equipped with an internal clockwork mechanism for the swinging lens, which was speed controlled with five variably sized fans that could be inserted on a socket one at a time on the underside of the camera. The inner lens tube (Figure 3) had a lever to shut off the external light after an exposure and while the swinging lens was being cocked for the next picture. This lever opened the lens tube when the lens was in position for the next exposure.

Almost a full 180° picture could be taken with the Al-Vista while the lens swung clockwise on making an exposure. To make a picture shorter than the full length, there was a movable stop built into the camera that limited the traverse movement of the swinging lens as desired. A button was placed on the left side of the camera so that the film could be perforated after an exposure to indicate where to cut the film between pictures when in the darkroom. Instead of an exposure counter as on earlier Al-Vistas, a recording dial was placed on top of the camera box which shows the actual number of inches of film that had been exposed at a particular moment. These Al-Vistas were equipped with a universal focus lens. The back of the camera contained a storage compartment for the viewfinder, fans and extra rolls of film.

By April 1900 the company had added to the Al-Vista line models No.3B and No.5D besides the Nos. 4B, 5B and 5C already in production. The No. 3B was similar to the No. 4B except that it used 3.5" roll film (Kodak 125 film) and took $3.5 \times 5"$ or $3.5 \times 10"$ pictures. The No.5D was like the No.5B but larger and was capable of taking different size pictures from 4" to 16" long, using 5" roll film.

The 1900 Al-Vistas were covered with black Morocco leather, had heavy nickel-plated metal fittings, and had a single knurled winding knob (Figure 4), except the No.3B which had two knurled winding knobs.

The 1900 catalog had sample photographs taken with each Al-Vista model. The company stated in the catalog "We will mail, postpaid, the actual photo displayed in the catalog full size, mounted on extra fine, heavy, bevel edge card, with relief center, on receipt of 24 cents in stamps." By sending these sample photos, the company promoted the Al-Vista to show the good quality photographs that the camera produced.

By June 1900 the No.7E Al-Vista was in production but was not shown in the 1900 catalog. The No. 7E was the second largest Al-Vista manufactured and could take a 180° picture 7x21" long using 7" roll film. The 1900 D and E models were made to order, and the company again stated that they could make larger sizes of the Al-Vistas when desired.

During the summer of 1900 two special directors meetings were called because P.N. Angsten was not satisfied with his

renumeration. To satisfy Angsten, the directors agreed and signed contracts with him to pay royalties on all cameras made, which were as follows: $3B - 10\phi$, $4B - 15\phi$, $5B - 20\phi$, $5C - 25\phi$, $5D - 50\phi$ and 7E - \$1. The company also agreed to pay the cost of the foreign patents.

Multiscope's Al-Vista Camera was awarded the highest Gold Medal award presented at the July 1900 Photographic Exposition held in Berin, Germany under the auspices of the Empress.

At the end of July 1900, the Multiscope & Film Co. moved into their new plant which was constructed under agreement with the Burlington businessmen. They made plans to double their work force as they had enough orders to keep a larger work force employed for a long time.

1901

At the January 14, 1901 annual meeting, the current company officers were reelected for the coming year. Since dealers were not buying the company's film products, the directors decided to market the company's film goods directly to the consumers. It was well known that George Eastman did not like competition so he made it difficult for competitors such as Multiscope to sell film in competition with Eastman Kodak products. At these Multiscope annual meetings, very little was recorded about the company's financial condition or profit and loss statements. The actual financial information on the company was discarded years ago.

In 1901 the company added Al-Vista models Nos.5F, 7D and 7F. All of the cameras produced in 1901 were covered with the finest black Morocco leather, and the exterior metal parts were heavily nickel plated. The No.7D and 7F Al-Vistas could take pictures 7x7.5" or 7x15" on 7" roll film. In addition the 7F could expose 5x7" glass plates.

The Nos.5F and 7F convertible Al-Vistas were provided with two fronts, one for panoramic work using roll film, and the other as a view camera using glass plates. - cont. on p. 15



Figure 4. Knurled type winding knob on 1900-1901 Al-Vistas.

Illustrated in Figure 5 is a No.5F with the panoramic front whereby 5x6" or 5x12" pictures could be made. Figure 6 shows the 5F with the front for taking 4x5" glass plates, and Figure 7 shows the back open with the ground glass focusing screen exposed. Figure 3 (p. 14) reveals the inside portion of the panoramic back of the No.5F. Note the serial number (3099) stamped on the lens frame. Most Al-Vistas have their serial numbers stamped here.

The No.5F was priced at \$60 while the No.7F was listed at \$100 in 1901. In mid-1901, all Al-Vistas were manufactured with two knurled winding knobs. Previously, only the Nos. 3B, 5F and 7F had two knobs instead of one. Once all the knurled winding knobs in stock had been used up, they were replaced with an easier-to-use rigid wing film winding knob, as shown in Figure 8.

1902-1903

At the annual meeting on January 13, 1902 the current officers were re-instated, and business for the previous was stated as satisfactory. It was decided that Mr. Partee would go to Rochester to call on Eastman Kodak to see if an amicable settlement could be made to take off the film restrictions imposed on Multiscope.

Also at this meeting, P.N. Angsten agreed to leave part of his salary and all royalties in the business until the company was on a better paying basis.

The nine Al-Vista models being manufactured at the end of 1901 were continued in 1902, at the same prices. These were the Al-Vistas Nos. 3B, 4B, 5B, 5C, 5D, 5F, 7D, 7E and 7F.

Peter Angsten was still dissatisfied with the company so on May 2, 1902 a special directors meeting was called to consider the proposition from Angsten to sell out his entire interest in the Multiscope & Film Co, including stock and patents, for \$3400. His proposal was accepted on May 29. Shortly thereafter G.C. Rasch resigned as president, being replaced by L.J. Smith. Smith's sonin-law, Mr. C. Partee, became Secretary and Treasurer. Mrs. Partee and Miss Jessie Smith were appointed company directors. At the next annual meeting on February 10, 1903 the above officers were re-elected.

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Figure 5 (top). The No. 5F Al-Vista with panoramic front;

Figure 6 (middle) The No. 5F with front attached for making 4x5" glass plate pictures;

Figure 7 (bottom) The No. 5F with camera back open. The focusing ground glass does not interfere with the camera's panoramic capability.





Business for 1902 was stated as very good and profits were put back into the business. With one addition, the Al-Vista product line for 1902 was continued in 1903 with no change in prices. However, the company changed the identifications of the Al-Vista cameras from, e.g. "No.3B Al-Vista" to "Model 3B."

The new camera added in 1903 was the Model 4G (Figure 9). At \$15 this was the least expensive model at the time. It was designed as a snapshot panoramic camera that used 4" roll film for making 4x5" or 4x10" pictures. This model had an adjustable spring for three swinging lens speeds (slow, medium and fast) instead of the internal clockwork.

Meanwhile, Eastman Kodak expressed interest in purchasing the Multiscope & Film Co., so on May 5, 1903 the books of Multiscope were examined by Eastman Kodak, but no agreement was reached because of the unsatisfactory conditions, according to Eastman Kodak, of the Multiscope business.

The Multiscope Company sent out direct mail letters to promote their Al-Vista cameras. They also took out magazine advertising where the ad read "A child can operate the Al-Vista Camera, it is so simple." The ad continued: "But that does not mean it is a child's camera. It is a fully equipped camera for the professional and artistic operator...Send for a handsomely illustrated book about it."



Figure 8. Rigid wing film winding knob introduced in 1901.



Figure 9. Model 4G Al-Vista of 1903. Notice the top lever film punch instead of side buttom film punch on previous Al-Vistas.

Persons who received the book were given a few days to read it. If no order for a camera was forthcoming, they were sent a follow-up letter, blunt and brusque, stating in part: "It cost us something to reply with your request. We were glad to make this expenditure, though thus far have had nothing for our trouble or our pains. We are anxious to find out whether your inquiry was made with the intention of purchasing one our celebrated Al-Vista Cameras or was it a matter of curiousity... to keep our records straight we want to know exactly which." This approach did not appear to be a good way to win customers, but nonetheless the company had a very good year in 1903.

1904

At the annual meeting of January 11, 1904 the company officers were re-elected and the profits were left in the business. All ten Al-Vista models made in 1903 were continued in 1904.

The 1904 Model 4B Al-Vista (photo on p. 11) was typical of the bottom fan cameras. It came with five speed fans, three lens stop diaphragms (f16, f32 and f64) which could be inserted in front of the f8 lens, viewfinder

and instruction book. The swinging lens movements resulted in the following equivalent exposures: 1/16 sec. with no fan, 1/8 sec. with the No. 1 fan, 1/4 sec. with the No. 2 fan, 1/3 sec. with the No. 3 fan, 5/12 sec. with the No. 4 fan and 1/2sec. with the No. 5 fan. In 1904 the Model 4B was listed for \$25.

Multiscope received so many orders for their Al-Vista cameras and photographic products that the payroll was increased to 85 workers. The factory ran out of space so the company expanded the first floor, and a third floor was added to the building. Multiscope no longer had to lease its factory: the company owned the building.

The 1904 advertising slogans were; "Do you want a Camera? \$1.50 a month buys an Al-Vista;" "The little camera that makes a big picture;" "The Al-Vista Camera has the confidence of the whole world;" and "Five Cameras in one for the price of one."

This concludes Part I of The History of the Al-Vista Cameras. Part II will appear in the next issue of the newsletter.

INTERNATIONAL ASSOCIATION OF PANORAMIC PHOTOGRAPHERS

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