

INTERNATIONAL ASSOCIATION OF PANORAMIC PHOTOGRAPHERS

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Reston, VA

Orlando, FL

Seattle, WA

An Ultra-Wide Angle Skyscraper Camera

By John Stamets

The only serious limitation of rotating lens cameras, in my view, is the curvilinear distortion of straight lines parallel to the horizon. For many subjects, especially landscapes, this distortion is either not apparent, or very negligible. However, the curvilinear distortion can be quite bothersome when photographing buildings up close or other man-made features that were built straight, not curved.

After several years of shooting with a Widelux, I went looking for the widest possible rectilinear camera (fixed-lens, fixed film plane) that was both affordable and easy to hand hold. I came up with a modified Brookes Veriwide that is the subject of this article. I call it my "Skyscraper Camera."

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March 28-31, 1990

Next IAPP Meeting Set for Orlando

Dates for the next IAPP Convention have been set for March 28-31, 1990 in Orlando, Florida. IAPP Secretary-Treasurer Dick Fowler, who lives in Orlando, will coordinate the convention planning.

Now is the time to be arranging for speakers, workshop topics, commercial reps, etc. Anyone with ideas for speakers, etc., or who can help in some other way, should contact Dick Fowler at the address on the back of this newsletter. For those IAPP members who also do wedding photography, you'll be interested in the International Wedding Photography show, also in Orlando and beginning April 1, immediately after the IAPP Convention. Since this is a large trade show, we hope to interest trade reps from that show to attend ours as well.



Pacific First Centre in Seattle was photographed by John Stamets with an ultra-wide "Skyscraper Camera"

I A P P

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For Sale: Cirkut No. 8 Outfit. Complete with 10.5", 18" and 24" triple convertible lens, gears & tripod. Good condition. \$1000. Contact Bill McBride, PO Box 6237, Santa Barbara, CA 93160. Tel. 805-684-7268.

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For Sale: 135mm/235mm Linhof Symmar, ctd, Synchro Cmpr, nrE+, \$285. 120mm Angulon, Linhof Cmpr, X sync, unctd, functions as double convertible nrE+, \$165. 58mm Grandagon, ctd, synced, 2.25 x 3.25", one TINY rub rear element zero affect, E+, \$270. Wanted: 6.5 x 8.5 RB Cycle body. Jim Vilett, 3040 NW 63rd, Seattle, WA 98107; 206-784-0983. 7pm PST.

For Sale: 10" x 1000 ft of fresh b&w RC contact printing paper, in factory-sealed box, \$100. Glenn Evans, 7729 N. Ashland, Chicago, IL 60626. GLENNVIEW, 312-761-6512, 312-761-3302.

Wanted: 8x20" Debusch film holders, 14" gold dot Dagors, 12 x 15 Busch and Lomb Protar, 16.5 Dagor or other lens to cover 8x20". Bruce Cook, 135 Dore St., San Francisco, CA 94103. 415-553-4178.

Wanted: 7x17 film holders and film. Eric Hummel, 222 Clinton St. Apt. #20, Hoboken, NJ 07030.

Wanted: 8" film for Cirkut No. 8 Outfit camera. The Lemley Studios, 4647 Cremon Rd. Temple Hills, MD. 20748. 301-423-7570.

Wanted: Information on the operating principles and design and construction of Cirkut and sweep cameras and any other unusual panoramic cameras. Books, patent numbers, or whatever information you care to share would be appreciated. I will pay cash or exchange favors or equipment. Also purchasing panoramic cameras. Glenn Evans, 7729 N. Ashland, Chicago, IL 60626. 312-761-6512, 312-761-3302.

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Behind the scenes at Skyline

Cirkut Printing at a Commercial Lab

By Rosemary Henry

From the simple beginning a number of years ago of trying to do a favor for a friend, Cirkut printing here at Skyline Color Lab has grown into a department of its own.

Over the years we've experimented, improvised, adapted and modified, until today we can routinely print thousands of Cirkut prints a day (based on an average 24" print).

When an order is received, the film is sent to the processing department for development. We keep an 11" C-41 processor for Cirkut film use only, and can process approximately 50 rolls of film per day. If the photo is to have a caption, list of names, company logo or any other graphics work added to it, that part is sent on for typesetting in our in-house graphics department. Captions are typeset directly onto film in multiple lots once a day. Any additional camera work involving logos or special art is done at this point. When the film is processed, all parts of the job are again joined and go on for printing.

For normal day-to-day operations, we work with two basic setups for contact printing: one for prints up to 30" long and the second for 30" to 48" prints. Anything over 48" is custom-printed in a two person operation. We are able to contact print any negative up to 10" x 84". Our daily workhorses are projection enlargers that have been fitted with custom-built, motor-driven easels designed here at Skyline.

The smaller of the two adjusts from 12" to 30" in length and the larger is adjustable from 30" to 48". Each negative is video-analyzed to insure print quality. Dodging and printing are routine. While we would like to be able to dazzle you with a description of our voice-activated, robot-controlled, electrodeluxe state-of-the-art printer for Cirkut negatives, the fact of the matter is that most of our adaptations and designs incorporate basic common sense and modifications that allow us to perform the normal routine a little better and a little faster.

The equipment used is always modified as the need arises or as a better idea surfaces, but the secret to our printing is not due to a magical piece of super-secret equipment, but to the fact that our technicians have made Cirkut printing a day-to-day routine through experience and skill.



In addition to contacting, we can also enlarge these negatives in sections that can be mounted and joined. Each panel can be up to 4 x 10 ft from a 10" strip of negative. To do this, we use a horizontal enlarger with a custom-built negative carrier projected onto a wall setup. Murals from 80 to 90 ft long are possible in this manner.

The majority of Cirkut work is in color. However, in both black & white and color printing, we find that the biggest problem faced is uneven exposure of the negative. Many times the center is properly exposed, but the ends are totally washed out, requiring a large amount of burning in. This happens especially when the setting is indoors, and a hand-held light is used to follow the movement of the camera.

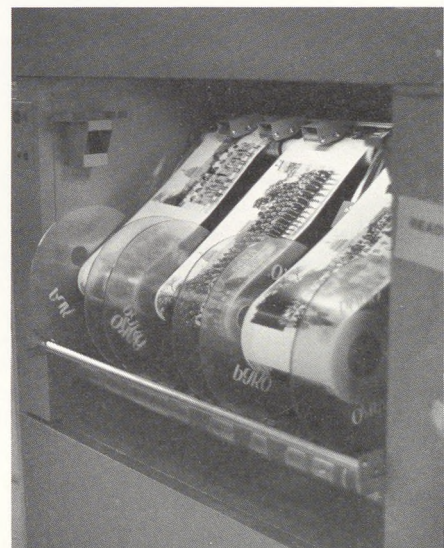
One particularly difficult printing job involved an auditorium setting with television reporters present. As the camera was rotating, the television lights were turned on the main speaker and he was totally washed out on the negative, requiring a burn-in of many minutes to get an acceptable print. This was quite a time-consuming task considering that the order was for several hundred prints. We've also had requests to fill in dull or flat areas in the center of a print, which we've accomplished by using an organization seal or logo (or sometimes creating a pseudo "banner") to be reversed out of the offending area.

Most special requests are for picture captions that are "dropped out" (printed white) in a dark area at the top or bottom of a print, but we also print these in black on a white background across the bottom or on a strip going down either side of the print.

For each photographer that requests captions done on a regular basis, we design a format that is used only for him, so that all his photos have a look that is unique to him. We've had requests for calendars and all types of advertising materials to be added to a print to increase the photographer's sales. We try to come up with an original way of presenting each new request.

I think our entire lab, and not just the Cirkut department, has a fascination for Cirkut photography. We often find our employees "checking out" each new group of photos as they are processed.

If you would like additional information about our methods or other information on Cirkut printing, please contact Roger Billstone at Skyline Color Lab, 703-369-1906.



A Skyscraper Camera

- from p. 1

Specifically, the camera is a 6 x 12cm Horseman roll film back mounted to the front end of a Brooks Veriwide which has a 47mm, f5.6 Super Angulon lens. Image size is 5.6 x 11.4 cm subtending a 61° x 101° view (by calculation). Horizontally, this is equivalent to a 15mm lens on a Nikon. The 6 x 12cm back takes 120 film only so I get six images per roll.

By comparison, the Fuji 6 x 17cm camera with a 105mm lens has an image size of 5.5 x 16.8 cm, subtending a 29° x 77° view and equivalent horizontally to a 22mm on a Nikon. It takes four images per roll of 120 film. The 35mm Widelux takes a 50° x 126° view.

Total cost of my Skyscraper Camera was \$1500 including a used Brooks Veriwide (with a 6 x 9cm back), the 6 x 12cm Horseman back, a Schneider center-weighted filter, and the fee for a camera repairman to fit the new back to the lens mount. The new back is easily detached and can be replaced with the original 6 x 9 back, although I've had no occasion to do so.

The same camera - although bulkier - can be achieved by fitting a 6 x 12cm back to a Sinar Handy or to a Cambo Wide 470. Current price for the Cambo type (from Calumet in Chicago) would be \$2130, including camera, back and filter. The advantage here would be 4 x 5" film capability (with vignetting at the corners) and presumably a better viewfinder. I still use - or rather don't use - the original 6 x 9 viewfinder from the Brooks Veriwide, but more on that in a moment.

The neutral-density, center-weighted filter is necessary to correct for the drop-off in light intensity towards the edges. Although this phenomenon occurs in principle with all lens, in practise it becomes noticeable only with ultra-wide lenses. In this case, there's a 1.5 stop difference between the center and the edges, so I rate ASA 400 film at 160 in the field.

The camera's most indispensable feature is a single bubble level attached at the top. Hand-held, I never look through the viewfinder or at the subject when I take a picture. I look at the bubble level. Sometimes I get a rough idea of the view by looking through the 6 x 9 viewfinder. More often I rely on my own eyeballs and experience to estimate the view. Then I point the camera and watch the bubble as I trip the shutter. If the camera is not absolutely level, vertical parallel lines will diverge/converge like crazy.

When I first got this camera in 1987, I was



Construction of Westlake Center in Seattle, March 1988, taken with a rectilinear ultra-wide camera (47 mm lens and 6x12 cm back). Note pin-cushion bending in upper right.

all excited to go shoot all those locations which were inappropriate for the Widelux because of that camera's curvilinear distortion. I headed straight for Seattle's Pike Place Market where I wanted to get an ultra-wide view of a straight row of storefronts. When I developed the film, I indeed had a perfectly straight row of normal-looking storefronts, but I was dismayed to find all of these uncommonly "fat" people at the edges.

Yes, I discovered the bane of ultra-wide angle lenses: a pronounced radial "stretch" distortion of 3-dimensional objects towards the edges of the image. All lenses exhibit this phenomenon, but whereas a normal lens may stretch a sphere by 5 or 6 percent at the image edge - hardly noticeable - my Skyscraper Camera had a 3-D stretch in excess of 60 percent at the edges. (Perceptually, some of this 3-D stretch is corrected depending on the distance from which you view the 2-D photograph, but that's another story.)

At any rate, I had just spent \$1500 to replace a curvilinear distortion with a stretch distortion. I was devastated. I figured the camera was good only for photographing walls and storefronts, and only if there were no people or cars around. Without a project, the camera sat on the shelf for six months. Then I had an idea...

The Vertico Project

Beginning in 1987 and continuing today, downtown Seattle has been undergoing the most massive re-construction since the city was rebuilt following the Great Fire of 1889, one hundred years ago. In the current boom five major skyscrapers and an underground bus tunnel are, or were, under construction. With everything torn up and looking like a war zone, the media dubbed the city "Little Beirut."

While most Seattle residents were doing everything possible to avoid the central

downtown area, I marched right into it with my Skyscraper Camera. My intention was to create an historical archive of epic images of the city while, like a snake, it sheds one skin for another. And even if most of the images aren't "epic," they will at least have documentary value many years from now.

The format fits the subject well. Not only does the camera maximize the amount of information from any given vantage point, but the subject matter, namely buildings, are comprised mostly of flat surfaces which are usually parallel to the film plane. Thus, the 3-D stretch doesn't affect the primary subject matter. Although flat surfaces which are not parallel to the film plane also stretch, I found that this stretch was much less noticeable than for a 3-D object. As long as I could keep cars and people away from the edges, the images would not appear distorted.

I call the project Vertico, a combo of vertigo and vertical. It's also short for a mythical Verti Company, which is making this city vertical with a vengeance.



The camera is the front end of a Brooks Veriwide fitted to a 6 x 12cm back.

In the last 20 months have shot over 600 rolls of 120 film on this project, mostly black & white. Although I have received some public and private funding, it's mostly my own time and money that goes into it. If not a lot of money, I do get a lot positive feedback on the project, so I intend to continue for another a year or so. I'm convinced that these photographs will accrue in historical value once the construction is finished.

Other Tips

Anyhow, back to some operational points of the camera:

1) I always shoot from a location where I can look down as well as up. If you shoot standing on the street or sidewalk, half the picture is a sea of concrete, which usually is not very interesting. For skyscrapers under construction, the best shooting sites are rooftops of mid-size buildings up to one block away.

2) I hardly ever use a tripod. Many shooting locations are relatively difficult to get to, and once there, there's no easy way to set up a tripod. More importantly, I can cover a lot more territory faster without a tripod.

3) Thank god for TMAX 400 film. That's why I don't need a tripod. I find this film is at least as sharp as Plus X and a lot more versatile. Developer is usually TMAX diluted 1:6, but on severely overcast days I shoot at 1600 (EI 600 with filter) and develop the film in Diafine. I've made prints as large as 30 x 60" and they hold up beautifully.

4) Because of the 1.5 stop attenuation of the center-weighted filter, I rate the TMAX 400 film at EI 160 in the field. On bright sunny days, I always shoot between f11 and f16 and set the shutter speed accordingly, between 1/30 and 1/250 second. If I'm careful, I can also hand-hold at 1/15 sec.

5) If I open up to f8 or f8/11, the center-weighted filter is noticeably less effective. If I stop down to f16/22 or f22, the rim of the filter itself begins to appear in the picture, causing vignetting.

Composite Panoramas

In the short direction, the camera's angle of view is 61°. Thus, if the camera is mounted vertically on a tripod, you can take a single roll of 120 film and make a 101° x 360° composite panorama in 6 frames. Make a contact sheet, cut it up and paste it together and you've got an enormous swath of visual space for less than \$4 in materials.

When I started the Vertico project, I did quite a few of panoramas in this manner.



Composite panorama of opening ceremony for Westlake Center in Seattle. Picture was taken hand-held using "sticks" and bubble level, as explained in text.

However, the tripod work became time-consuming and cumbersome, so I developed a simple technique using sticks joined at angles of slightly less than 60° (to insure overlap). The collapsible sticks fit easily into the camera bag. On site, I lay the sticks on a ledge or other surface, then I just point and shoot along the directions of the sticks. As long as I hold the camera level, this works as well as the tripod. However, because it is "point and shoot," you need to build in some overlap and you won't get a full 360° in 6 frames.

Then one day I found a fabulous panoramic viewpoint overlooking the ground-breaking ceremonies for the new downtown Seattle Art Museum. I had my Skyscraper Camera, but neither a tripod nor my sticks. So I did my best to guesstimate 60° angles, then pointed and shot a unique, 101° x 240° panorama of this historic event.

Now I don't even carry my sticks. I figured that if people can aim rifles to shoot birds, I can train myself to accurately point a camera. First I choose and shoot the primary view. Then I guesstimate the views 60° apart, etc., always holding the camera level. Here the 6 x 9 viewfinder, which is more or less accurate in the short direction, is helpful. My safety net is to "bracket" by shooting a second frame slightly in from the first guesstimate. I may use up a little more film this way, but so what?

Conclusions

If this camera is so great, why doesn't Fuji or Linhof make one for public consumption? I don't know for sure, but I can come up with three plausible reasons:

1) The 3-D stretch distortion at the edges is so severe that it limits the usefulness of the camera. Architectural photography appears to be its only useful application, and even then, care must be taken.

2) At the far edges, my lens has a noticeable pin-cushion distortion caused by optical imperfection. Although this becomes apparent only when a rectangular building fills the entire frame at the far edges, it's bad enough to disqualify the camera as "architecturally perfect." Presumably, 47mm Super-Angulons leave the factory with a range of pin-cushion bending at the far edges, and somewhere there is the perfect 47mm S.A. I'd like to find it. Perfect 47's are probably too expensive to supply on a regular basis. (If anybody knows about this, I'd like to hear from you.)

3) Because of the center-weighted filter, you pretty much have to shoot between f11 and f16 if you want to both utilize the full frame and compensate for the light drop-off. Of course, with some subject matter, the lens works fine without the filter, but you will have to do some burning and dodging to even out the print. Also, you can stop down beyond f16, but you'll have to crop the edges if you don't want the vignetting caused by the filter rim.

For reaching a mass commercial market, these are serious limitations. Even Calumet doesn't advertise 6x12cm coverage for their Cambo Wide 470. But I've learned to work around these limitations, and for me the camera is a fabulous "one-trick pony."

HISTORY OF THE AL-VISTA PANORAMIC CAMERA. Part II

By Bill McBride

This article is the second and final installment on the manufacturing history of the Al-Vista Panoramic Camera. The first installment appeared in the April 1989 IAPP Newsletter.

L.J. Smith applied for a panoramic camera patent on February 15, 1904 and the patent was granted on October 25, 1904 (No. 773,348). This Al-Vista had the air resistance fans placed on top of the camera. Also a rubber slide was used for making different sized pictures when this type of camera first appeared on the market in 1907.

1905-1906

At the February 20, 1905 annual meeting the officers were re-elected and all earnings were re-invested to increase the business. In 1905 the Al-Vista Camera Models 3B, 4B, 5B, 5D, 5F, 7E and 7F remained in production, but Models 4G, 5C and 7D were discontinued. Although the Model 4G was not shown in the 1905 catalog, it is believed that some were nevertheless made in 1905.

At the annual meeting of April 5, 1906 the officers and directors were re-elected with Mrs. C.E. Partee as the new Vice-President and Miss Jessie Smith remaining as a director. The business was not doing well so no dividend was declared at this time.

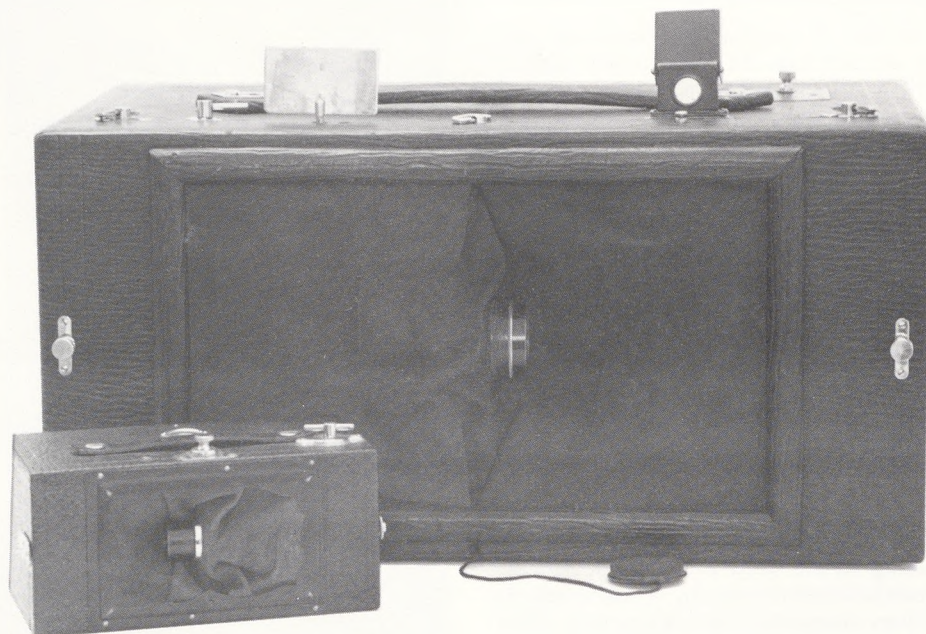


Figure 1. The Baby Al-Vista No. 1 is dwarfed by the Model 7E Al-Vista.

In 1906 Multiscope expanded its camera line to include glass plate cameras under the Badger name, in addition to the Al-Vista panoramic cameras. The company chose that name because the badger was the Wisconsin State animal, and the state's nickname was the Badger State. The majority of the Badger plate cameras offered in 1906 were made for Multiscope by Seneca Camera Co. of Rochester, N.Y. A few of the Badger cameras were made by Conley Camera Co. of Rochester, Minnesota. In 1906, 37 different Badger plate cameras were offered, ranging in plate size from 3.25 x 4.25" to 6.5 x 8.5". The catalog also offered many Badger supplies such as films, darkroom equipment, tripods and other items.

The same Al-Vista models manufactured by Multiscope in 1905 were continued in 1906. In 1906 Multiscope also added a new panoramic camera model, the "Baby Al-Vista" which cost \$3.50 and was the lowest priced Al-Vista ever produced. This was a simple panoramic camera designed for the tourist. It used 120 film and took a 2.25 x 6.75" picture. By adjusting the swinging lens spring tension, the camera had four different exposure speeds: slow, medium, quick and fast. The Baby Al-Vista had a black enameled removable viewfinder and a built-on rolling ball level. The company advertising promised "No failures with this camera." This model eventually became known as the Baby No.1 Al-Vista (Figure 1).

1907

Due to the success of the Baby Al-Vista No.1, Multiscope introduced the Baby Al-Vista No. 2 in 1907. The No. 2 was similar to the No.1 except that it used three different sized external air-resistance fans on a simple internal clockwork to control the exposure speed. This was an improvement over the Baby Al-Vista No. 1.

The No. 2 was covered with Morocco leather, had a rapid rectilinear lens and a nickel-plated removable viewfinder. The No. 2 had a higher-quality appearance than the No. 1 and its workmanship resembled the larger Al-Vistas. At the same time, the No. 2 was an inexpensive panoramic camera at half the price of the No. 1 Kodak Panoram. Multiscope offered the No.1 for \$3.50 and the No.2 for \$5.



Table 1. AL-VISTA CAMERA MODELS

Model	Available Years	Film Width	Picture Lengths	Swinging Lens Mechanism	Remarks
Baby No. 1	1906-1908	2.25"	6.75"	B	Most inexpensive made
Baby No. 2	1907-1910	2.25"	6.75"	C	Uses 120 film
3B	1900-1908	3.5"	4.5" or 9"	C	Uses 125 Kodak film
4	1898-1899	4"	12"	B	First production model
4A	1899	4"	A	B	
4B	1899-1910	4"	A	C	Made in six versions
4C	1899	4"	A	C	Uses 3.25" x 4.25" glass plates too
4G	1903-1905	4"	5" or 10"	B	Made for snapshots
5	1899	5"	12"	B	
5A	1899	5"	A	B	
5B	1899-1910	5"	A	C	Made in six versions over the years
5C	1899-1904	5"	A	C	Uses 4x5" glass plates too
5D	1900-1910	5"	A and 16"	C	Made to order too
5F	1901-1910	5"	6" or 12"	C	Uses 4x5" glass plates too
7D	1901-1904	7"	7.5" or 15"	C	
7E	1900-1910	7"	10.5" or 21"	C	Made to order too
7F	1901-1908	7"	7.5" or 15"	C	Uses 5x7" glass plates too
Senior	1899	8.5"	26"	C	Holds 500" of roll film

A - can make picture lengths of 4", 6", 8", 10" or 12".

B - cylindrical spring controlled swinging lens.

C - clockwork with different sized fans to control the speed of the swinging lens.

Its unknown how many Baby Al Vistas Nos. 1 and 2 were produced because they lacked serial numbers.

In 1907 Multiscope manufactured the Al-Vista Models 3B, 4B, 5B, 5D and 7E under a new design. They were made more compact with the air resistance speed control fans placed on top of the camera front. This was made possible by placing the gear train on top of the front instead of the bottom as on previous Al-Vistas. A 1907 Model 5B is shown in Figure 2. It had a removable rubber slide to set the length of picture desired. Instead of a rigid wing film winding knob, the new design now used a collapsible wing film winding knob. The carrying strap was placed on the side of the new camera configuration. The 1907 Models 5F and 7F were the same as the ones made in 1906.

1908

A special directors meeting was called on January 22, 1908 where the directors decided to sell all the corporation's real estate, comprising of its factory buildings in Burlington, to Verstaete-Fyfe Manufacturing Co. of Milwaukee, Wisconsin for \$10,215. Also sold to Verstaete-Fyfe were the corporation's photographic machinery and tools for \$5,000. A contract was also signed for Verstaete-Fyfe to manufacture \$50,000 worth of various photographic supplies and

cameras, thus relieving Multiscope of having to do the actual manufacturing. Otherwise, there was no change in the management of the Multiscope & Film Co. and they were to carry on a wholesale and retail camera and photographic business at a different location in Burlington.

At the April 6, 1908 annual stockholders

meeting, all company officers were reinstated. The 1907 business report was very poor with losses, so L.J. Smith was instructed to borrow from the Bank of Burlington enough money as needed to carry on the business. They moved into their new quarters in the Petrie Building on July 11, 1908 to conduct their wholesale and retail photographic business.

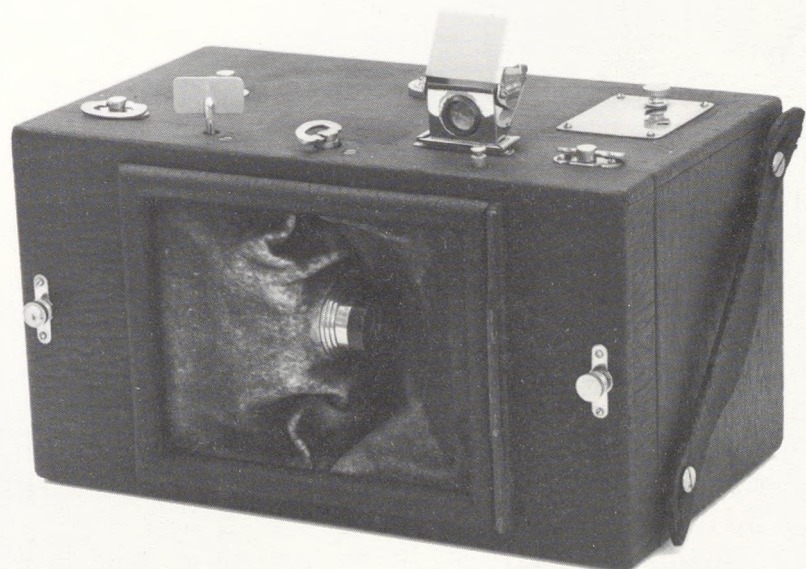


Figure 2. Model 5B made in 1907. Lens swings counter-clockwise on exposure.

Al-Vista History

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In July 1908 Multiscope produced a 100-page catalog (No.15) of photographic goods. The Al-Vista Panoramic Cameras available were the Baby No.2 and Models 4B, 5B, 5D, 5F and 7E. The Models 3B and 7F and Baby No. 1 were discontinued. The Badger glass plate camera line was expanded to 116 different cameras in their largest ever catalog. The majority of the Badgers were now made for Multiscope by the Conley Camera Co. of Rochester, Minnesota. Also available from Multiscope were Badger developing papers, preparations and photographic supplies.

Late in the afternoon of October 17, 1908 a fire was discovered on the third floor of the Verstraete-Fyfe factory. It was put out quickly but not before a large amount of water had been thrown into the building. The fire was probably caused by spontaneous combustion in the factory paint shop. The estimated loss to machinery, materials and valuable patterns was estimated at \$12,000. Because of the fire, it was agreed that Verstraete-Fyfe would pay for the building, but cancelled their contract to manufacture \$50,000 worth of goods for Multiscope.

In December 1908, Multiscope agreed to sell and assign to the Conley Camera Company all the patent letters and patent rights to the Al-Vista Panoramic Cameras, including various chattels, tools and dies for their manufacture. From then on, Multiscope no longer manufactured cameras but maintained a wholesale and retail photographic business in Burlington and Chicago marketing Al-Vistas, Badgers and photographic supplies.

1909

Early in the morning of January 20, 1909 the Verstraete-Fyfe Burlington Factory was completely destroyed by fire of unknown origin and with an estimated loss of \$70,000.

At the annual Multiscope stockholders meeting on May 4, 1909 the company officers were again re-instated. The business report for 1908 showed very bad losses, and it was decided to give the business another year's trial along different and more conservative lines, which was reflected in the smaller 1909 catalog.



The Multiscope 1909 Catalog (No.16) listed the No.2 Baby and the Al-Vista Models 4B, 5B, 5D, 5F, and 7E. The last batches of the 4B, 5B, 5D, 5F and 7E had the viewfinder and film inch recording dial cover painted with flat black enamel instead of being nickel-plated. Also these cameras were now supplied with an f8 iris-equipped lens, thus eliminating the need for the diaphragms. The name plates on the back of these very last cameras produced included all of the Al-Vista patent dates. The number of Badger Plate Cameras available was reduced to 28, and the list prices of the Badgers were lowered to meet the competition. Ten different Ansco roll film cameras were also shown in the catalog along with other photographic supplies.

There were no more Multiscope annual meetings or directors meetings recorded after the May 1909 annual meeting until the special stockholders meeting of April 30, 1915.

1910-1915

The Multiscope 1910 Catalog (No. 17) was very similar to the one for 1909 as the company struggled to stay in business. In 1910 Mr. C.E. Partee took the controlling interest in Multiscope and formed Partee Photo Supply Co. and moved the company offices from Burlington to Chicago. From then on, Multiscope & Film Company existed on paper only until it was formally dissolved on April 30, 1915.

Advertising in 1910 stated that the Al-Vista was manufactured exclusively by Partee Photo Supply, 1223 Wabash Ave., Chicago, successors to the Multiscope & Film Co. It is doubtful that Partee Photo actually manufactured Al-Vistas, but rather they sold the cameras left over from the Multiscope inventory.

Partee Photo obtained their Badger Cameras from Conley and Ansco Cameras from Ansco. The company handled both wholesale and retail photographic businesses, and the firm kept a crew of salesmen on the road.

In 1910, Partee Photo published Catalog No. 18 which included Al-Vistas, Badger and Ansco cameras. Although hundreds of photographic items were listed for professionals and amateurs, Partee Photo Supply did not carry Eastman Kodak Cameras or film products due to Eastman's restrictions.

In January 1911 Partee sold Partee Photo Supply for an undisclosed sum to Sweet, Wallach & Co. of Chicago, a branch of the so-called Eastman Trust which was buying out Eastman Kodak competitors as a method of removing competition. C.E. Partee then returned to Burlington to work for the Burlington Electric Light & Power Co.

Conclusion

Multiscope tried hard to succeed in the photographic business, but after three disastrous fires, they could not completely recover. Table 1 summarizes all the Al-Vista models made over the years while Multiscope was in business. The popular Model 5B was their biggest seller.

How many Al-Vistas were produced is unknown, but by analyzing the serial numbers, it is estimated that about 10,000 were manufactured. During its peak years, the company had branch offices in New York, Chicago and Portland, Oregon and European outlets in London and Berlin.

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