

PANORAMA

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PANORAMIC
PHOTOGRAPHERS

THE MAGAZINE OF PANORAMIC IMAGING

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This shot of Lake O'Hara at Yoho N.P., British Columbia, was taken by Doug Brown with his Roundshot 120.

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PRESIDENT'S MESSAGE

"LETTERS" GUIDELINES

I was having a discussion with another member. He brought up some really fabulous new ideas for improvements.

I suggested that he share them with the rest of the association by writing a letter to the editor. I could tell that he was surprised at my suggestion. His belief was that alternative points of view were simply not printed. I went back and read my old issues. Sure enough, the last discussion of issues published was two years ago. The subject was "should the name of the association use the word Panoramic or Panorama."

The bylaws state that one of the objects of our Association shall be to express opinions about panoramic photography. I encourage all members to write constructive letters, whether pro or con, that deal with products, the association, *Panorama* magazine, or any other issue concerning panoramic photography.

Please do not submit letters for publication containing negative comments that are destructive, hateful or vindictive. If you have a pet peeve, please suggest positive alternatives rather than venting your hostilities.

It is easy to go on and on about a subject that you are passionate about. Get to the point. IAPP reserves the right to print excerpts. Send all of your submissions to Addie Lorber, IAPP, P.O. Box 2816, Boca Raton, FL 33427. All letters to the editor will be first read by the entire Board of Directors.

Both sides of any issue, stated in a positive constructive manner, will be printed. All members who have ideas or concerns but do not wish to have them published are also encouraged to write. Letters that are intended for the entire board may be sent to Addie Lorber for distribution. If you wish to contact an individual officer or board member you

will find their names and addresses listed on this page.

Another possibility for sharing ideas is on the internet. Letters can be posted on America On Line, Kodak Forum, Professional Imaging Message Center, Panoramic Photography section. If you have written an article and would like to have it instantly published and made available to over a million people, you can upload it into the Professional Imaging Library on AOL. If you are not a member of AOL and would like to have your articles uploaded, E-mail them to me at iapprez@aol.com. I will be happy to post them for you. The last time I checked the number of down loads for materials posted by members were as follows: a logo design-7, membership form-19, text of an IAPP on line chat session- 96, Bob Lang's computer program for circuit gears-52, and Bill McBride's time line of pan photography-128.

PAY UP!...DUES US OR LOSE US!

This is the last issue of *Panorama* this year. If you have not paid your 1996 dues, this will be your last issue period!

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This year it's easier than ever to pay dues. You can put your 1996 dues payment on your Visa or MasterCard.

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A NEW AREA FOR PHOTOGRAPHIC EXPLORATION

PANOPTICAL UNDERWATER PHOTOGRAPHY COVERING 360 DEGREE HORIZONTALLY

By Michel Dusariz

Since 1987 I have built several types of rotating panoptical cameras to cover 360° (and more) horizontally in one single continuous take. The cameras are simpler and perform better than systems commercially available.

The first camera had an interchangeable back which transforms a normal SLR camera into panoptical 360° camera. Then, according to the principle invented by Dane Lars R. Larsen, I built a panoptical camera covering 360° horizontally and 104° vertically on 120 film, two panoptical 360° pocket cameras, and finally I created two 360° panoptical, stereo 3D cameras (one for 35 mm film, the other for 120 film). All these cameras have been described in a 138 page book, thoroughly illustrated, written in English and still available.

In 1992, I managed a "worlds first" by taking a 360° aerial photograph sending the camera aloft by kite.

Towards the end of 1994, I got the idea of taking panoptical 360° underwater photographs, which to the best of my knowledge is another first.

After some weeks with systems design and construction of the underwater body (which is of the diving bell type), and after a few dry runs, the first test was made on January 12th, 1995 with my old diving club, EPSM. (EPSM president, Jean Debremaker is an underwater photographer with an international reputation. He is also president of the Commission for Audio-Visual Technics of Lifras-Belgium.)

The camera is a small format

panoptical which on dry land covers 360° on 78.5 mm of 35 mm film. The underwater body, which turns with the camera during the take, is in plexi and ballasted to provide zero gravity when submerged. It has a porthole of mineral glass in front of the lens. The underwater body is about twice the height of the camera (which sits in the uppermost part). The lower part is totally open to allow for the use of a tripod.

As the underwater body descends vertically, water will enter from beneath. This was not important during my experiments in a swimming pool, (at limited depths, the underwater body is so tall that the camera, in its upper part of the body, stays dry). However, according to the law of pressure, at 10 meters depth there is a pressure of two atmospheres, which will compress the air and make the water rise to fill the body to exactly half full. This is still within acceptable limits, as the body design takes this into account. In any case, external and internal pressure are equal, so there are no problems for the underwater body.

It is easy to compensate for the rise of water and lower its level by injecting air at the pressure of the working depth. Injection takes place at the bottom of the body through a small tube. There is no working depth limit with this system.

While resurfacing, the air injected into the body expands and leaves the body under the lower rim.

A system for automatic compensation for increased pressure and rise of water in the body has left the drawing

board and is being built.

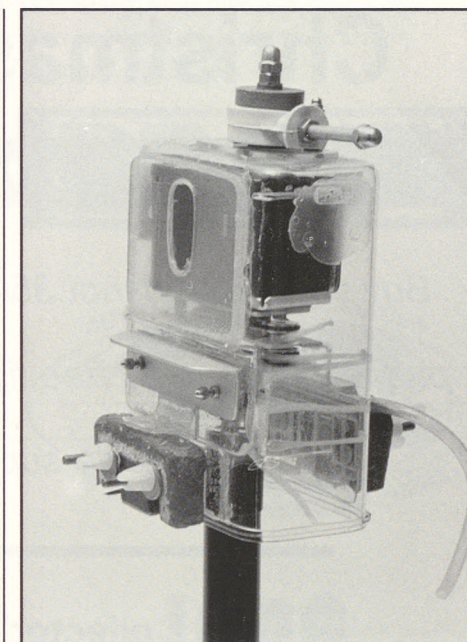
Since we are dealing with an "open body" system, it is necessary to keep the body in a vertical position at all times during submersion.

The first test carried out on January 12th, 1995 proved the system works perfectly (except for image sharpness). Since I have had similar problems during other experiments, this did not discourage me, and I started looking for solutions.

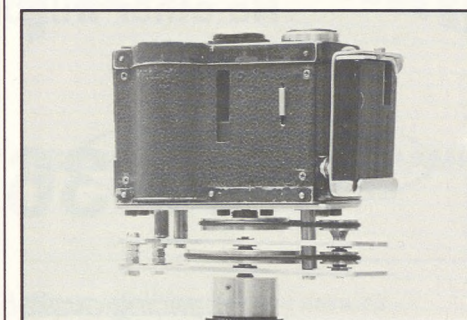
After a thorough examination of the problem, I found that when shooting on dry land, sharpness is the same whether you shoot with the naked camera or through the porthole of the underwater body. However, the submersion of the camera system alters the relative focal length of the lens by a factor of 4/3, something which seriously upset the very functioning of the process. I had simply forgotten to take this rather evident peculiarity into consideration.

The panoptical camera works according to a process where the film travels simultaneously with the rotation of the camera at a rate of 2 times focal length multiplied by 3.1416. Since the submersion in water transforms the relative focal length of the camera by the factor 4/3, the length of film per revolution no longer corresponds to the focal length.

It is possible to correct this problem in several ways - build a new camera, specifically designed for underwater use - construct a supplementary cylindrical lens



Camera in diving box; on the top, a magnet, for the two blades and electric contact, through the wall of the box.



Camera out of diving box; showing the lower pulley conversion device, for changing the ratio of the film run from 3/3 to 4/3, at the bottom of the camera.

PLEASE SEE "WATER PAN" PAGE 12

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CALIFORNIA PHOTO FUN!



Kornelius "doing his thing" in Irvine.



Fuji pan update from Tim Mathiasen.



Dan Slater with his "toys".



Will Landon talks Hulcheramas.



Agfa knows how to throw a barbeque.

1996 IAPP World Conference

Although the site and dates for the 1996 World Conference have not been chosen, the committee is working hard sorting out the details; possible locations are being visited now. Cherokee, North Carolina and Ashville, North Carolina are two areas being considered.

As soon as plans are finalized, the details will be published in *Panorama*.

IRVINE MEETING A BIG SUCCESS!

By Fred Yake

Twenty-seven of our members gathered in Irvine, California Sept. 29-30 for a meeting filled with great speakers, networking, food and fun.

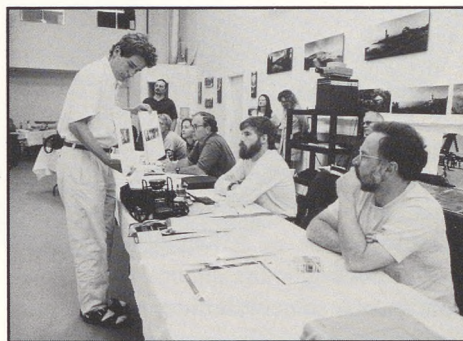
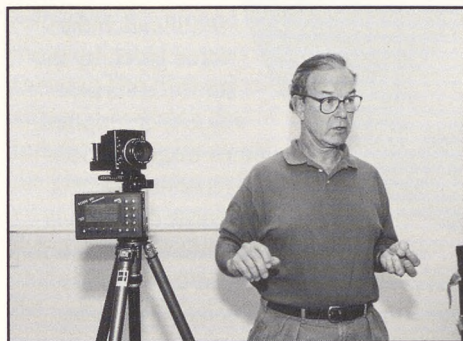
Our hosts, Kornelius and Janet Schorle of Pro Photo Connection, did a great job arranging the meeting and sponsors. Kornelius introduced new Noblex equipment and also gave a tour of his Pro Photo Color Lab which features special panoramic printing equipment.

The meeting was held in a classroom at their lab which is also used for local photography classes.

McDuff Everton gave a presentation of his beautiful panoramic photographs which appear in such magazines as *National Geographic Traveler* and *Conde Nast*. Will Landon spoke on Hulcherama modifications, Skip Baldwin demonstrated a new 35mm Super Camera, Tim Mathiasen demonstrated the Fuji

Panoramic Camera and Kate and Geir Jordahl gave a presentation on their beautiful infrared panoramas.

Agfa, Fuji and Konica gave a talk on their film and paper products. Agfa and Konica passed out lots of film samples as well as tee shirts. Agfa sponsored a delicious barbeque dinner on Friday night and a number of us gathered at the Schorle's for a Sunday get-a-way breakfast at their home.



LOGOS

We have had a few more logo designs submitted by members. We will be voting soon. If you don't see one you like, design your own and send it to: Warren Wight, 644 Magnolia Drive, Maitland, FL 32751.



Above left: Skip Baldwin answers questions on the Roundshot.

Above center: Members checking out Kate & Geir Jordahl's prints.

Above right: McDuff Everton spends time with IAPP members.

Left: Group shot from the Irvine meeting.

DEVELOPMENT OF A CAMERA FOR CONICAL PANORAMIC PHOTOGRAPHY

By Andrew Davidhazy

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ABSTRACT

This paper is a report on the development, operating principles and applications of a camera capable of making distortion free peripheral reproductions of conical objects. In addition, the parameters governing its use for the generation of conical panoramic photographs are also described. Examples of both types of applications are included. Suggestions for other applications are given. A brief review of the operating principles of standard panoramic, peripheral and linear type strip cameras is included in the introduction to the paper.

1. INTRODUCTION

The principles governing the operation of panoramic cameras which are capable of making extremely wide angle photographs by rotating roughly about the rear nodal point of their lenses while moving film behind an open slit located just in front of the film surface are well known. Basic relationships are presented below in general terms to establish a common level of understanding so that the rest of the material can be presented in the context of where it fits in with established camera systems.

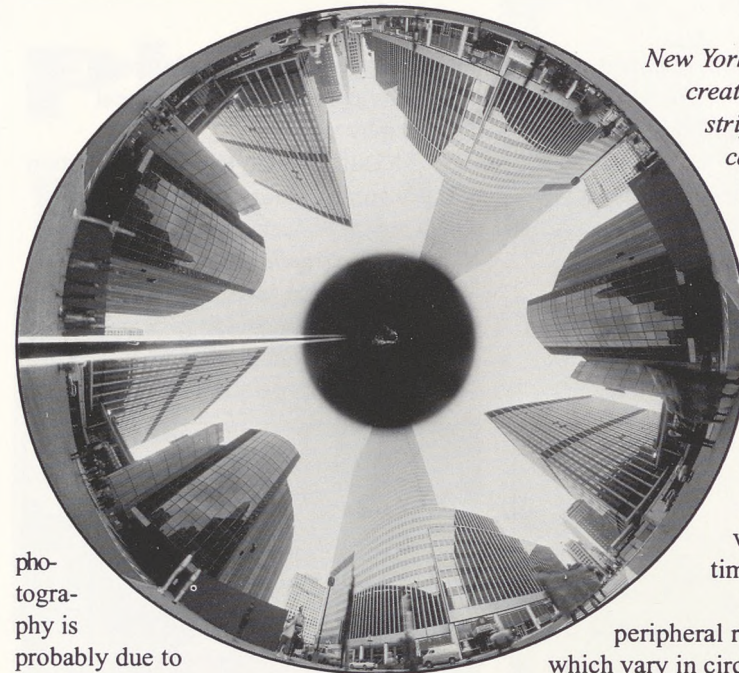
Among the earliest panoramic cameras of the type described above is the Cirkut camera, introduced by Eastman Kodak in the late 1800's and which was available in a wide variety of film sizes.

Modern cameras of similar design include the Hulcherama, the Alpa Roto, the Globuscope and the Panalux or Roundshot.

It is fundamental to fully understand the method by which these cameras operate to realize that they record subject DISTANCE, or image position, along the slit and TIME at right angles to the slit. Since in all of the above applications the velocity at which the film moves is the same at the top and bottom of the slit, the elapsed time for any given length of film which passes through the camera is the same at the top and bottom margins of the film.

Panoramic records made with "cirkut" type cameras are made by rotating the camera about a vertical axis thus scanning the scene in front of the camera in sequential fashion. The film accumulates the changing image information presented to it by the scanning camera and eventually builds up a record on a length of film containing a view of any desired angle even up to (or beyond) 360°. For the record to look sharp the film must move at the same velocity as the image. This is accomplished by moving a length of film equal to $2(\pi)$ times the lens focal length past the open slit during the time for one revolution of the camera. In actuality it is the rear nodal point to film distance that matters but since in most applications the object distance is large, the lens focal length is usually a close enough approximation to this measure.

Related to the panoramic camera, the peripheral camera is not as well recognized in either the literature or in terms of working models. The cause for this lack of recognition for peripheral



New York City skyline created with the conical strip camera. The camera recorded slightly more than two 360° panoramas on one revolution of the film disc.

photography is probably due to the fact that this application is somewhat more specialized. It is interesting to note, however, that the making of peripheral photographs, sometimes called cyclographs, of Greek and Mayan pottery, has been practiced since the late 1800's in a number of major museums and also in industrial situations.

Peripheral records of the surface of cylindrical subjects can be easily made by rotating the subject in front of the camera. The film in the camera is made to move at right angles to the axis of rotation of the subject and in the same direction as it's image. The slit restricts the angle of view along the axis parallel to film motion to a very narrow angle, thus it encompasses only a small portion of the cylindrical subject's surface. At the slit, then, the image of the subject's surface appears to pass by in linear fashion, as in racetrack photography. Again, the film velocity is

set to match the value given by the subject's surface velocity multiplied times magnification.

Note then, that peripheral records of subjects which vary in circumference can only

be reproduced properly at those points where their image velocity happens to match the film velocity.

Since the film can only match one particular image velocity, it follows that image velocities which are slower than the film velocity will produce records which are stretched out and those which move faster will produce compressed reproductions. That is, since the lengths of the images recorded behind any given point along the slit are all the same, this results in invariable distortion of all areas which did not move at the same velocity as the film.

Finally, the other two variations on the above themes, that of race track photofinish and synchroballistic cameras and that of aerial strip cameras, apparently complete the applications circle of those cameras which make more or less realistic records by moving a length of film past a

slit and capturing the image of the subject by making it's image travel across this slit at the same speed as the film. In effect, in these cameras the moving image scans itself onto the passing film by virtue of its motion.

In these "linear" type cameras, the film is simply made to move at the expected velocity of the image. In racetracks the camera is fixed and the image of the racers passes over the slit in the camera. The film velocity is adjusted to approximately match the expected velocity of the images of the subjects. In aerial cameras, the plane moving with respect to the ground below causes a moving image to pass by the slit of the camera. The film velocity is again adjusted to match that of the passing image. Film velocity can be adjusted as the plane changes velocity by making a visual comparison between the motion of the ground's image with the motion of a chain which is matched mechanically to the velocity of the film. Alternately, it is possible to make the comparison electronically. When neither is practical, then camera operators must take into account the operating magnification of the camera and adjust the film velocity to the apparent subject velocity multiplied by the camera magnification.

Generically all of these cameras or systems can be labeled as variants of "strip" recording cameras and can be called simply "strip cameras".

2. CONICAL PANORAMIC PHOTOGRAPHY

By way of introduction to this camera it may be appropriate to state that it is a well established operational fact among panoramic photographers that panoramic cameras must rotate about a

vertical axis unless one is willing to accept horizon lines that wander up and down along the panoramic image. A variation on this theme is one in which photographers have tilted their cameras down while still keeping the axis of rotation vertical so that the horizon line effectively remains level. Attachments, notably the Goldbeck "wedge" are available, particularly for the Cirkut-type cameras, which allow the cameras to point up, or down, while still keeping the axis of rotation of the camera vertical. The idea is that if one can raise or lower the angle of view and still keeping the axis of rotation vertical, one can lower or raise the horizon line while still keeping it parallel to the film edges along the panorama.

The difficulty which photographers who have investigated the use of these camera tilting attachments have found is that their photographs are no longer sharp from top to bottom, although indeed the horizon line is parallel to the sides of the film from end to end. The reason for this lack of sharpness is that in this mode the slit and film plane in their basic strip panoramic camera no longer describe a cylindrical path but rather a conical one. The result is that while the camera views equiangular rates of change along the slit these do not encompass equidistant displacements in the subject. In fact, if the camera could be tilted so far down or up that the point about which the camera rotates were included on the film, this point would be standing still. Therefore, the conical surface which the slit of the tilted camera describes results in uneven image velocity along the slit.

Yet, the film in the Cirkut or other strip panoramic camera, moving in linear fashion, can only produce a cylindrical record since the film velocity is constant

along the slit of the camera. This introduces the blurring along the vertical dimension of the film when one tilts a Cirkut camera with the Goldbeck wedge. To solve this particular problem and to produce conical panoramic images, I realized one would have to design a camera where the film moved at different velocities along the slit of the camera.

2.1 Development of the camera

The development of the present camera is a direct result of a conversation at the Las Vegas meeting of the IAPP in the 1980's where this problem with the Goldbeck wedge was mentioned. Typically photographers had tried to use the tilts of a moveable front and rear standard to attempt to introduce differential magnification to compensate for the change in subject elevation. This does not work.

I had developed a camera that was capable of moving the film at a different velocity along the slit but had been using it mostly for peripheral

photography of conical subjects like teapots. Realizing that it had the exact characteristics needed to deal with changing image velocity in a panoramic application it took me no time at all to check it out for this purpose.

At the heart of the solution to the problem was a modification of the camera itself that solved the problem introduced by tilting the camera. It neatly solved the problem of differential image velocity along the slit by moving the film in a

SEE "CONICAL" PAGE 8

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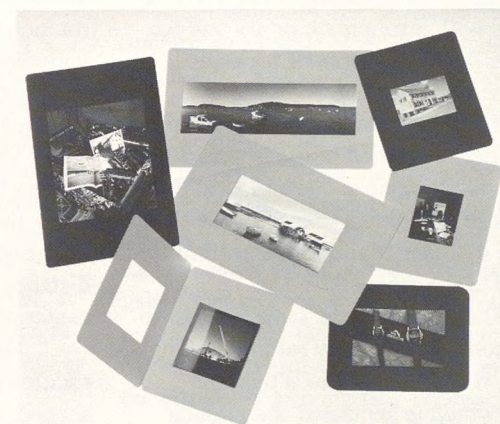
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CONICAL FROM PAGE 7

circular, rather than linear, fashion, as is the practice in all other "strip" cameras.

The basis for the design was the realization that on a turntable the surface velocity is a function of the distance from the center of rotation. When a slit is extended from the center of a turntable, a piece of film attached to the turntable moves past this slit at increasing velocities with increasing distance from the turntable's center. At a later date I made another connection with an existing imaging system when I noticed that the manner in which a conventional strip peripheral camera delivers undistorted records of cylindrical objects is similar to the operation of a printing press. Here, a cylinder with information on its surface, transfers onto the support a series of perfect rectangles.

That is, the length of the transferred images per revolution of the impression cylinder is the same at one end as at the other since the circumference of the original cylinder is also uniform from one end to the other.

When one tries the same procedure with a conical subject by rolling it along a surface, it becomes obvious that the surface which is generated is a circular one. If the cone has an apex, then the apex will be located at the center of the circle. The number of degrees out of a complete circle which the cone describes during one revolution is a function of the steepness of the angle of its side. The steeper the angle, or more pointy the cone, the smaller part of a complete circle which will be produced by making the cone complete one revolution. If it is so steep that it is, in fact, a cylinder, then the length of the image along the circle will be reduced to the width of a single line. In

the case that the cone is so flat that it is actually a flat circle, then the transferred record will also be a full 360° circle. These conditions are obviously extremes but it helps to think of these extremes to relate them to standard strip cameras and to appreciate how these systems work.

Anyway, once I realized the operating principle of a camera which could transport the film past a slit at various velocities, it took me very little time to build a prototype model. The camera was designed to accept 4" diameter discs of film cut from sheet film.

These discs were held on the surface of the rotating circular film holder by means of two-sided adhesive tape. The rotation rate of the film holder could be varied by changing the voltage to the DC gearhead motor to which it was directly attached.

There was provision built into the camera lens mount to allow it to move along the length of the slit so that an image could be formed at any given distance less than 50mm away from the center of the film disc.

The present camera can achieve film rotation rates of about ten degrees per second, and the slit is about one degree in size so that minimum exposure times are in the order of 1/10th of a second. The film can be slowed down to about one degree per second by simply decreasing the voltage to the DC gearhead motor.

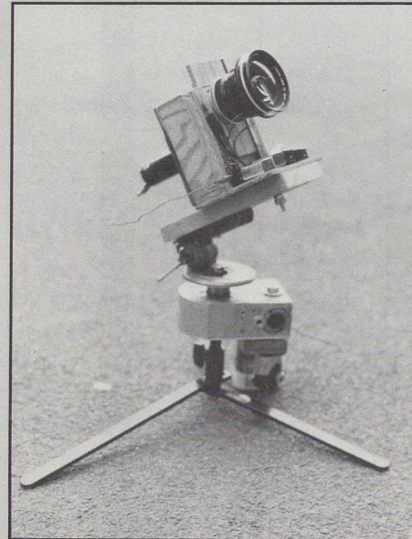
2.2 Setting up for conical panoramic photography

The operating procedures for using this camera in the panoramic mode depend on the lens which will be used and the dimensions and characteristics of the cone which one wishes to make. Once the

lens focal length which will be used is chosen and the desired side angle of the cone is fixed, these two parameters determine where the lens must be placed with respect to the center of the film disc and the relationship between the time for

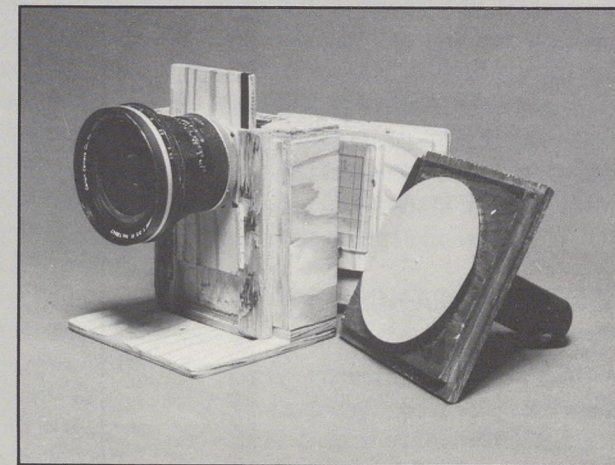
one revolution of the film disc in relationship to the time for one revolution of the camera.

The inside side angle which is chosen must be the angle that the film disc



Below: Close-up view of the conical panoramic/peripheral camera showing the turntable that rotates the film past a wedge shaped slit to keep exposure uniform along the radius of the rotating film disc attached to the turntable with two sided sticky tape. The lens is attached to a board set in a "U" channel to provide adjustable position from film disc center. This adjustment is needed as the camera angle is varied.

Above: The conical strip camera set up for panoramic photography. Both the film disc motor and the motorized tripod head are powered by batteries. Their voltages are adjusted to move the required amount of film past the slit in the camera for a given elevation angle of the camera.



surface must maintain with respect to the horizontal as the camera rotates about a vertical axis. The camera may be pointed upward or downward. In the former case the slit must be located above the axis of rotation of the film disc, while in the second case the slit must be located below the axis. Alternately, the camera needs to be merely inverted when it is pointed downwards. The reason for the location of the slit above or below the disc rotation axis is that the center of the disc must record those areas of the subject which are nearest the apex of the cone which the rotating camera is describing. In both instances the film disc must be turned in such a direction that it matches the direction in which the image moves with respect to the slit in the camera.

The location of the lens from the center of rotation of the film disc, $D(L)$, is a function of the lens focal length, $F(L)$, and the side angle. More precisely, the rear nodal point of the lens must always be located directly above or below the center of rotation of the film disc. This displacement of the lens axis from the center of the disc is a function of the tangent of the inside angle and the lens focal length:

$$D(L) = F(L) \times \text{tangent inside angle}$$

This relationship fixes that the lens position, when the side angle is 0° , equaling the inside angle of a flat "cone", must be such that the lens axis is directly above the center of rotation of the disc. In this case the camera is pointed straight up and only half of the image circle produced by the lens falls on the slit. Conversely, when the inside angle approaches 90° , the lens must be located at a great distance

from the center of the film disc in order for it to be above the center of the disc. At a side angle of 90° the lens will be infinitely far away. At such a distance, as far as the lens is concerned, the film will move in linear fashion rather than circular fashion.

At this extreme the length of film required to cover a 360° panorama will be equal to $2(\pi)$ times the lens focal length. In fact, this extreme is a special case of the "conical" camera, and is exemplified by the traditional cirkut type panoramic camera!

The above factors determine whether the film disc available in a given camera is large enough to accommodate the chosen lens at a desired side angle. For any given diameter film disc, use of long focal length lenses will restrict the camera to the production of shallow cones, while short focal length lenses will allow cones of steep inside angle although at reduced image sizes. The four inch diameter disc which this camera uses can make cones of up to about 65° - 70° side angle (average for lamp shade use) with lens focal lengths of about 20mm.

Unlike cylindrical panoramic cameras, where the lens can be raised or lowered to alter the position of the horizon line, in conical cameras, the placement of the lens at other than the one position determined from the factors named above will produce blurring along the height of the panorama or radius of the circle.

The relationship between the time for the film disc making one revolution, $R(f)$, and the time taken by the camera to scan 360° , $R(c)$, are given by:

$$R(c) = R(f) \times \cos \text{side angle}$$

This means that under normal conditions, more than one 360° panorama can be included on one disc of film. In fact, when the inside angle of the cone is 60° , exactly two 360° panoramas can be recorded because the cosine of this angle is .5.

The angular rotation rate of the film determines the exposure time for a given angular slit width. Exposure time is determined through exactly the same procedures described above when they were applied to the making of peripheral photographs.

2.3 Applications for conical panoramic images

The images produced this way could find direct application in transfer to such items as lampshades, novelty hats, and decorative purposes for any number of items which have a more or less conical shape. Presently, adaptation of standard images to the surface of objects of conical section requires digital analysis and manipulation which is not an impossible task but not readily available to photographers used to more standard recording techniques.

A further application of the present camera is that with a slight loss in sharpness it could be used to distort conventional cylindrical panoramic or other images so that they could be bent into, or adapted to fit, conical shapes. This loss in sharpness is associated with the mismatch in image vs. film velocities resulting from the alteration of the aspect ratio of the original as the conical image is made. The blurring effects of this differential movement of the image with respect to the film can be minimized by making the exposing slit very narrow, thus

limiting the exposure time during which blurring can affect the recorded image.

Of course, as other strip cameras, this camera can also be used for peripheral photography. You can read about the application of this camera for such purposes in an article published in an SPIE publication, Proceedings of a 1989 meeting on Current Developments in Optical Engineering and Commercial Optics held in San Diego and published by SPIE, the International Society for Optical Engineering, Bellingham, WA.

3. CONCLUSION

In summary, the development and operating characteristics of a camera suitable for making essentially blur-free conical panoramic photographs and their subsequent display as conical objects has been reported. When the operating limits of the circularly moving film camera design, as exemplified by the present camera, were investigated it was established that strip cameras in which the film moves in linear fashion are special cases of the design and operating principles of the circularly moving film approach described above.

When applied to panoramic work, this camera is able to produce photographs which are suitable for a variety of utilitarian purposes without additional manipulation.

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Presented by PhotoCentral • Held at the Mount Eden Mansion • Hayward, California
February 24 and 25, 1996

Hayward Area Recreation District's PhotoCentral presents the **Panoramic Photography Workshop**, join the exciting world of wide view photography in a hands-on intensive weekend. Participants will have an opportunity to see and use a variety of panoramic cameras.

Discussion topics will include: seeing in panorama, printing, presentation, display challenges and resource people. The workshop will also cover the variety of ways to create panoramic images with standard photographic equipment and participants will be introduced to the specialized cameras on the market.

The **Panoramic Photography Workshop** will take place on the beautiful grounds of the Mount Eden mansion. A list of nearby accommodations will be sent to registrants. The Mount Eden

Mansion is located in the San Francisco Bay area with easy access to the Oakland/San Jose and San Francisco Airports.

The instructors for PhotoCentral are IAPP members Geir and Kate Jordahl. Geir and Kate hold masters degrees in photography from Ohio University and have been teaching photo classes for the past fifteen years. They are instructors at Chabot College, Hayward. Their photographs have been exhibited internationally and are in many collections including the Bibliotheque Nationale de France. They were Artists-in-Residence for Yosemite National Park in 1993, and they are represented by Vision Gallery, San Francisco.

For more information contact: Geir and Kate Jordahl at 510-881-6721 or 510-278-7705. You can also fax them at 510-881-6763 or e-mail PhotoCentral at: PhotCentrl@aol.com.

Thinking Ahead

By Everen T. Brown

Panoramic photographers are lucky because there isn't a lot of competition. When I approach a prospective client about a custom panoramic shot for their business or about a group photo, they are amazed with panoramic photography. Clients often say that no one who does panoramics has approached them before. While this may sound like there is no competition, we are still competing with the standard "square" image. It is our job to educate clients to the possibilities our medium provides.

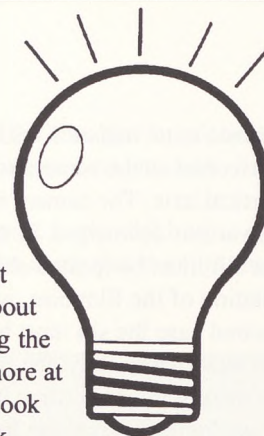
A portfolio of one's work is valuable. It should highlight your best. It should be up to date. Would you feel comfortable hiring someone who hasn't gotten a job recently? I know we all get busy, but keeping our portfolios updated is important.

Put it together in user-friendly packaging so a prospective client can be comfortable handling it. I have my prints

laminated; it keeps them protected. I don't have to worry about clients destroying the prints so I feel more at ease while they look through my work.

You might be reading this and thinking, "I'm a panoramic hobbyist, why do I want or need a portfolio?" You never know when an opportunity will present itself. If you have something to show, chances are it will sell. Having a portfolio positions you as an organized, dependable person. I once got a video production gig based on showing my panoramic photos to a prospective client.

Have a portfolio ready to go and when an opportunity arises, you will congratulate yourself for THINKING AHEAD!



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Whether you're wild about news/realism, people, scenic, architecture or industrial, Linhof's Technorama 6175 (6x17cm, with sharp 90mm F5.6 lens) takes the widest image, 14% wider than our nearest competitor and without distortion, converging lines, bowing or keystoneing. Film area: 3x wider than 6x6. Exposure times: 1-1/500 sec. and 8. Aperture settings: F5.6 to F45. Linhof's 612PC II (6x12cm) has 65mm and/or 135mm lenses. Film area: 2x wider than 6x6. So don't walk, run to an authorized Linhof dealer to widen your horizons.

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For Sale: Noblex 135s, with all manuals & acc., includes a fitted pelican case. \$1400, mint. **Wanted:** *Panoramic Photography* by Joseph Meehan. **For Rent:** 1996 Olympics, Atlanta, GA., 5 Bdrm. house, 20 minutes from downtown. 5 minutes to Lake Lanier, with pool, tennis, nearby public golf courses. Regular price is \$1000 per night. IAPP members \$850 per night. Sleeps 12-14. My neighbor has 2 B&B rooms for rent with same IAPP discount. Seven night minimum. Phone: 770-271-2637.

Mini-MEETINGS

February 16-17, 1996

Rocky Mountain High at the Broadmore Hotel, Colorado Springs. The five star hotel is giving IAPP members a special rate of \$85/night. Call 719-577-5775 (mention IAPP). For more info call Bob McIntyre at 719-577-5734 (days).

April 25-27, 1996

Return to Flagstaff at the Little America Hotel, shoot panoramas all day, socialize and camera flea market at night. Call 800-352-4386 for reservations. Mention IAPP and receive a rate of \$69 a night. For info contact Chet Hanchett, 314-781-3600, or E-mail: VPan@aol.com

For Sale: Production run of V-Pan cameras available soon. Order yours today! Chet Hanchett, 314-781-3600.

For Sale: Noblex 150, like new, with close-up and polarizer filter. Also comes with a Luna Pro meter, \$1850. Call Gordon Chait, 602-998-3123 (home) or 602-866-7885 (office).

For Sale: Alpa Roto 60/70, and other swing lens cameras. Philip Rich, 402-334-1974 or fax 402-339-0981.

For Sale: #10 Cirkut camera. \$7500 (includes 100 rolls of free processing). Peter Lorber, 407-361-0031.

For Sale: Original Folmer & Schwing Tripod for #10 Cirkut. (Regular length without ring gear.) \$500. 15-inch f9 Ilex Paragon Process Lens mounted on a "C" board for #10 Cirkut, mint, \$120. Trevor Bitter, 6936 NW 31 Ave., Ft. Lauderdale, FL 33309. 305-973-0421.

For Sale: *Panoramic World* book makes a great gift! \$19 each or two for \$29, ppd. USA only. Send to: ET Brown, Box 296, Salt Lake City, Utah 84110.

For Sale: Horizon Pano 35mm 202, excellent condition with case and filters, \$450. Call David Renshaw after 7pm pacific time, 818-289-5810.

For Sale: ASA 400 black and white film for #8 Cirkut cameras. I am looking for members interested in sharing an order I will place with Ilford Photo, for HP5 Plus Aerial film, 8 inches wide and 250 feet long. Approximate cost is \$300 plus shipping. Delivery time 12-16 weeks. I have a small amount of this film available for sampling. Call Benjamin Porter in the evenings EST, 704-258-2493.

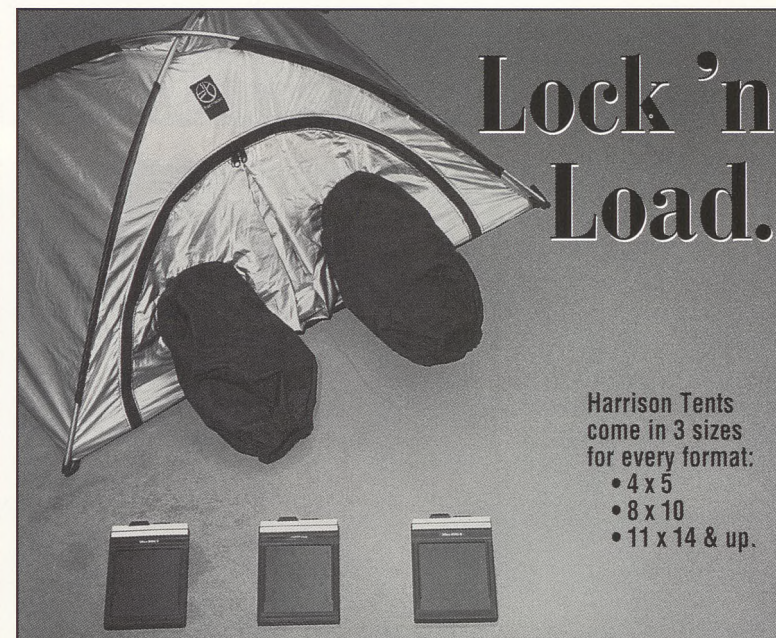
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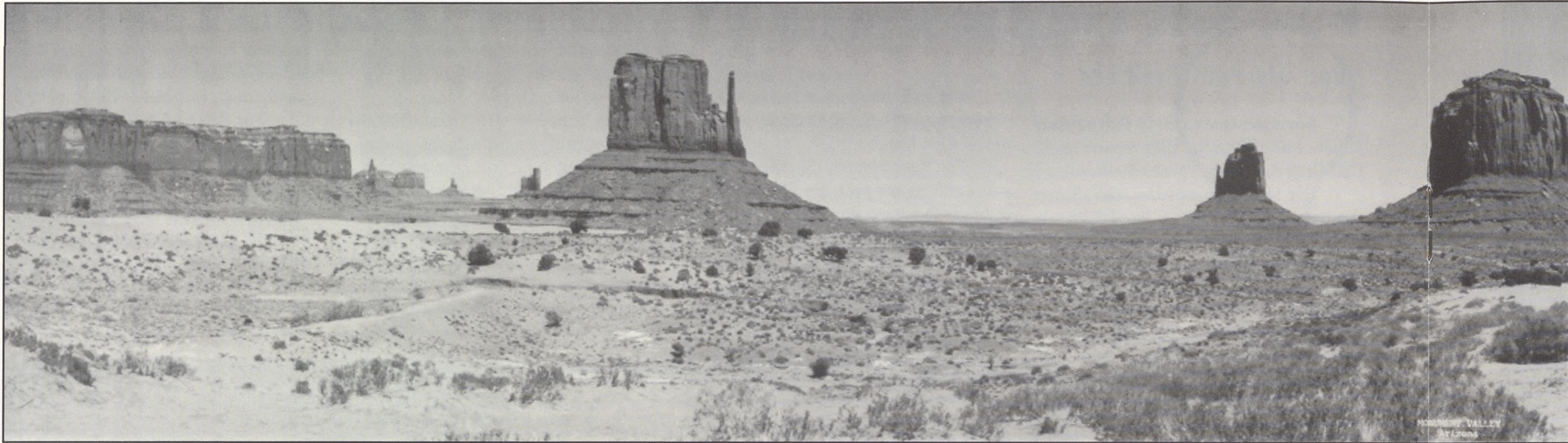
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This photo of Monument Valley, Arizona, was taken by H. Carey Moore in April '95. He used his #10 Cirkut to record this 220° image. The site is located on the Arizona-Utah border northeast of Flagstaff. Carey took this photograph from a small bluff just below the Visitor Center. There is actually a cow somewhere in this picture. Good luck finding it!



WATERPAN FROM PAGE 3

to compensate for the different refraction index of the water, or attach an external mechanical system which makes the camera turn once every time an amount of film corresponding to 4/3 of a normal take travels through the

camera. The size ratio of the picture originally 5/40 becomes 7/60.

It was the latter solution I adopted for the successful test carried out on January 16, 1995. Black and white film and color film were exposed for 10 complete rotations each.

The results of my first experiments were not of great photographic quality, but that was not my objective, I simply wanted, at this stage, to demonstrate the process.

Improvements can be made to increase the quality. Changing to 120

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UNDERWATER PANOPTIC 360° PHOTOGRAPHY - February 16, 1995
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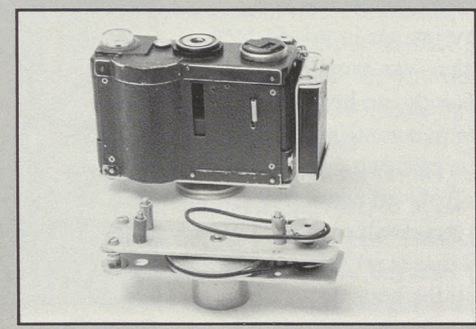
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format would be a big improvement.
 A future extension of the sub-marine experiment will be 360° panoptic photography in 3-D stereo.
 Many thanks to my friends from EPSM for welcoming me. Also thanks to the following for valuable help and

advice: Gilbert Hieff, club trainer; Marc Hiernaux, national trainer; Laurent Zimmermann, teacher in physics; Jerme Mallefet and Guy Joris and their pupils who kindly served as sub-marine models for these first underwater photographs.

Above: EPSM diving club during training. This 360+ degree underwater photograph was taken by Michel Dusariez (seen on both ends of the image).

Right: Camera and the lower pulley conversion device ready to be attached to the camera.



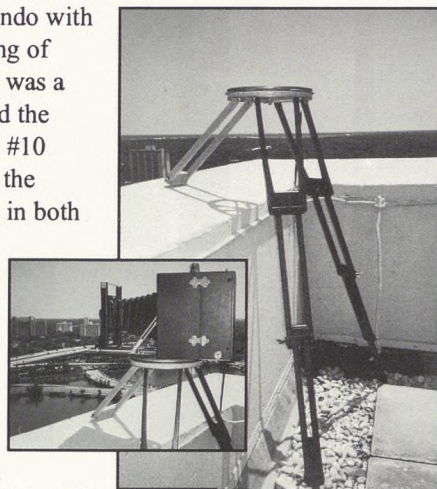
PROBLEM SOLVING

By Richard Fowler

Problem: To photograph the city of Orlando with my #10 camera from the roof top of my building of choice presented the following problem. There was a four foot high wall, thirteen inches wide around the perimeter of the entire roof. I needed to get the #10 tripod up as close as possible to the wall to get the maximum pan without this wall obstacle being in both ends of the cirkut photograph.

Solution: Build a short leg for the tripod so the #10 cirkut camera can be moved several feet and be positioned as close and as safely as possible near the edge of the building.

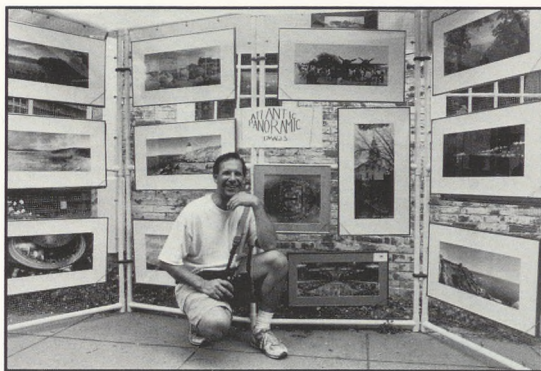
Results: Since I had taken a cirkut from this spot several years ago, I knew the angle of the photograph would be limited because of the wall coming into the pan on each end. By using the short leg and moving the camera forward, I was able to get a greater angle of view in the final photograph with no wall problem. In this business one must improvise.



ART SHOW SCENE

By David Turner

For a third year now, I've displayed my panoramic photography in a local outdoor art festival...the Wickford Art Festival in Wickford, RI on July 8th & 9th, 1995. About 250 artists displayed their artwork, selling drawings, paintings, sculptures and photographs. For the third year now, I'm the only panoramic photographer displaying and selling my images in this festival. The weather was excellent... slightly cloudy, no humidity. I sold more panoramics this year than in the past two years combined. I displayed panoramics from my travels all over the US, but I find that at art festivals, local scenes sell the best.



David Turner in his booth at the arts festival.

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Stock SUGGESTIONS...

By Doug Segal



Doug Segal is managing director and co-owner (along with brother & fellow IAPP member Mark Segal) of PANORAMIC IMAGES, "America's Premier Large Format Panoramic Photo Stock Library" in Chicago. Since 1987, PI has been a major supplier (120+ contributing panoramic photographers, full time staff of 7 and over 200,000 transparencies on file) of medium and large format panoramic photographs to the advertising and graphic design industries in North America. PI distributes the USA stock photo industries only all-panoramic stock photo catalogs and has overseas representation through a worldwide network of sub-agents.

Greetings to all IAPP members! While working non-stop on our next all panoramic stock catalog over the past few months the Panoramic Images staff has come up with a list of "technical snafus to avoid" for panoramic stock enthusiasts.

Wobbly World of Panoramics

Despite all the fantastic gear you have spent a mint on (not to mention a good deal of your waking hours) the art and science of silver halide based photography is often a technically imperfect world. If this rings true, then even more "wobbly" is the world of panoramic photography.

As we have been closely scrutinizing the catalog selects of your color

panoramic transparencies (98% of our files are chromes) we have discovered some pattern in the types of technical defects which have been encountered. Sadly, many fine compositions had to be kicked out and replaced by other "less technically imperfect" chromes.

Snafu Avoidance List

Or how to keep your chromes from ending up in the "click and speck" pile - the term our Japanese friends use for garbage that ends up on the film where it doesn't belong!

a. Start with a clean camera/back:

Have your equipment checked (or do it yourself) and blown clean of dust and particles inside and out before you head off to all points of the compass. Pay special attention to the film transport mechanism where a tiny grain of lodged sand can ruin 20 rolls of film. Inside your cases keep your cameras and film backs (this means you V-Pan, Art-Pan and Canham view camera owners!) in large heavyweight ziplock plastic bags. This is cheap insurance to keep out the "in camera" dust we keep seeing in those otherwise gorgeous blue skies.

b. Use filters conservatively: If you are a polarizer enthusiast, PLEASE shoot primo scenes with and without a polarizer. Polarized colors may look great in the original but they make it very difficult to make a good chrome dupe and quality dupes are the heart of the stock photo marketing biz.

Other filtered pans that sell most often seem to be created with the family of lightly colored top weighted density filters. This is a complex and expensive

topic. A few of our contributing photographers have spent much more on their filter packs than on their panoramic cameras!

c. Exposure control/focus: Don't blow out the highlights! General rule of thumb for stock photography purposes: shoot right on the money and make your brackets slightly under. For duping and 4-color printing process purposes it is much better to have a slightly under-exposed (1/8 to 1/3rd stop) chrome than a slightly overexposed one. This is not a mandate to shoot dark. Please do not shoot chromes for stock that have more than 1/4 of the image area in shadow, especially if the shadow is completely black.

Those of you shooting view camera type panoramics, please be sure that your standards are squared off and your lens is closed down. We are seeing many zone focusing problems that have ruined otherwise gorgeous work.

d. Don't skimp at the lab: Using a lab that runs a ton of E6 daily, replenishes their chemistry accordingly and has people who are chrome processing specialists will take care of most of these processing glitches. Old or bad chemistry at cheap labs (what are we talking about here money-wise as the difference, .40 - .75 per 120 roll? Come on, this is still the cheapest part of your stock production equation) may give you dull chromes, bad color, spots or stains and many migraines. Use a good lab.

e. Blue "moons": Please be aware that there are very few labs who are setup to process 220 film in true "dip and dunk" without harming it. The most common type of damage is the indentation crescent, or "moon" as we fondly call it at PI,

which is a fingernail shaped crease in the film caused by poor handling. Of course these almost always occur in the sky or light colored area of the chrome effectively ruining it for further duping, color separations or photographic printing. A few pan shooters have told us: "those moons, oh the client won't mind them. They look just like a seagull (or other bird) in the sky." How I wish it were true. These "moons" may occur during any stage of the film handling process from loading a roll into the camera to rough handling during the 4-color printing drum separation process. This is one reason we mount most of our photographers' chromes in a sturdy cardboard mount and also why we do not allow our clients to make color separations from original transparencies - it must first be returned to PI for duping.

f. The digital cure: Sure, if you've got King Tut's treasury anything's possible! Even to repair modest glitches on chromes caused by a. - e. above, it gets costly, although costs are slowly coming down and the quality is getting better. The best digital chromes are still too expensive for most speculative stock purposes. For a high quality drum scan, a minimum of computer system time for retouching, and highest resolution output on 16K film reorder to an 8x10 chrome you can expect to pay from around \$350. to \$500 each depending on quantities.

So it's much easier on the pocket-book (and the aspirin jar) to avoid the snafus before they happen. Thanks for your help and attention. Together perhaps we can make the world of panoramic photography a bit less wobbly.

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HISTORY of THE ROUNDSHOT

Compiled by Werner Seitz

- 1955 - The first Panorama Camera for 35mm film; f = 28/35/50mm
- 1958 - Cine Rotation Cameras with 16mm film
- 1960 - Middle format Reflex mirror Panorama Cameras; Film: 70mm/Rollfilm, Lens: 75mm
- 1961 - Panorama Cameras; Lens: 47/65/75/90mm, Film: 70mm/Rollfilm/5 inch
- 1970 - 35mm Panorama Mirror reflex cameras; f=35mm
- 1970 - Demi-circle Enlarger; Middle format: 3x , 4x , 5x
- 1971 - Stereo Pipline Panorama Cameras with Lampe weatherproof; Film: 35mm
- 1974 - Combi Rotation Cameras for Video & Film with Lampe, for Tube Inspection; Film: 35mm
- 1979 - ROVICA; Video and Rotation Mirror reflex System in one camera
- 1981 - 35mm printer; Film and paper rotation
- 1982 - Projectil cameras from 4.5mm to 15mm diameter, reflex viewfinder; Lens: 25mm
- 1983 - Caverne Stereo Panorama Camera; steel construction with Lampe, use to depths of 3000 meters
- 1985 - Enlarger for 35mm film; Paper rolls: 30cm
- 1985 - Model 35/35 and Model 65/70, under the name Panoscope
- 1986 - Zylinder cameras, from 78mm to 105mm diameter, Lampe/Motoren Inspection
- 1986 - Enlarger for Middle and Large format; Paper rolls: 90mm to 500mm
- 1987 - Super Camera; Film: 5 inch, Spool: 15 meter, Lens: 38mm to 600mm. Panorama - Linear - Turntable
- 1988 - Changed name from Panoscope to Roundshot (because of problems with Panasonic)
- 1990 - Mirror reflex Panorama Camera; used by the military, f=250mm, Film: 70mm
- 1990 - Panorama Projector; 150 degrees to 360 degrees
- 1992 - Super Camera; Film: 70mm/Rollfilm, Lens: 40mm to 500mm. Panorama - Linear - Turntable
- 1992 - Enlarger for 200mm or 300mm paper rolls
- 1993 - Stereo Panorama Camera; 2x21mm Elmarit, Film: 35mm
- 1993 - 35mm Panorama Camera with interchangeable lens; 21/28/35mm
- 1993 - Enlarger 508; Vertical continuous feed enlarger, from 35mm to 5 inch film, Paper up to 50 cm
- 1994 - Super 35 Camera for Nikon or Leica lens. Panorama - Linear - Turntable

THE VIRTUAL GALLERY of PANORAMIC IMAGING AND TECHNOLOGY

By Richard Schneider

I am interested in designing and producing a rather complex project which would hopefully involve many IAPP members. The thoughts behind this project are traceable to the demonstration on Apple Quicktime VR technology, which occurred at our convention in Flagstaff.

I have tentatively assigned the title "The Virtual Gallery of Panoramic Imaging and Technology" to the project. Basically, I wish to create an imaginary museum/gallery environment which features historic and contemporary panoramic photographs, as well as the cameras and other mechanisms which produced them. This environment will be created using photo images of a set location (such as an empty convention hall) and combining them with images of display cases and framed images found in other locations. The VR software (or something similar) will be able to synthesize these images into a seamless, realistic environment which does not exist in real life. The visual information will be recorded onto a CD-ROM (or two) and will be visible only through a computer monitor.

The reasons for creating this virtual exhibition space are rooted in some practical problems. While an actual museum would be a wonderful space for having some retrospective exhibit on panoramic photography, there is no major museum I know of which has such plans on the drawing board. It might be possible for an exhibit of this sort to be included in one of our conven-

tions, but I believe it would be difficult, if not impossible, for us to arrange for a loan of historic cameras and images from holdings from around the world, just for a one week engagement. I trust that many IAPP members have historic cameras and images, but may not be willing to cart them along to a convention site.

One great feature of the Apple VR software is that the user can highlight, lets say a 19th century camera, and use the mouse on their computer to turn the camera around or up and down, enabling them to get a full view of the artifact, a view they could never expect to get in a normal gallery or museum. This would be an excellent resource for those wishing to study cameras they may have never seen in real life.

One issue that will make or break a project like this is how to fund it. I have already started making inquiries into funding sources for multimedia productions of a historic or educational nature. So far I have information from the NEA, NEH and the Guggenheim Foundation. Many of these funding sources have a more favorable response when dealing with non-profit organizations rather than individual artists/producers. This is where IAPP could not only help, but gain some notoriety in the field.

As I suggested above, the project would have a 20th century component to it as well. This might be easier to deal with both in terms of practicality and

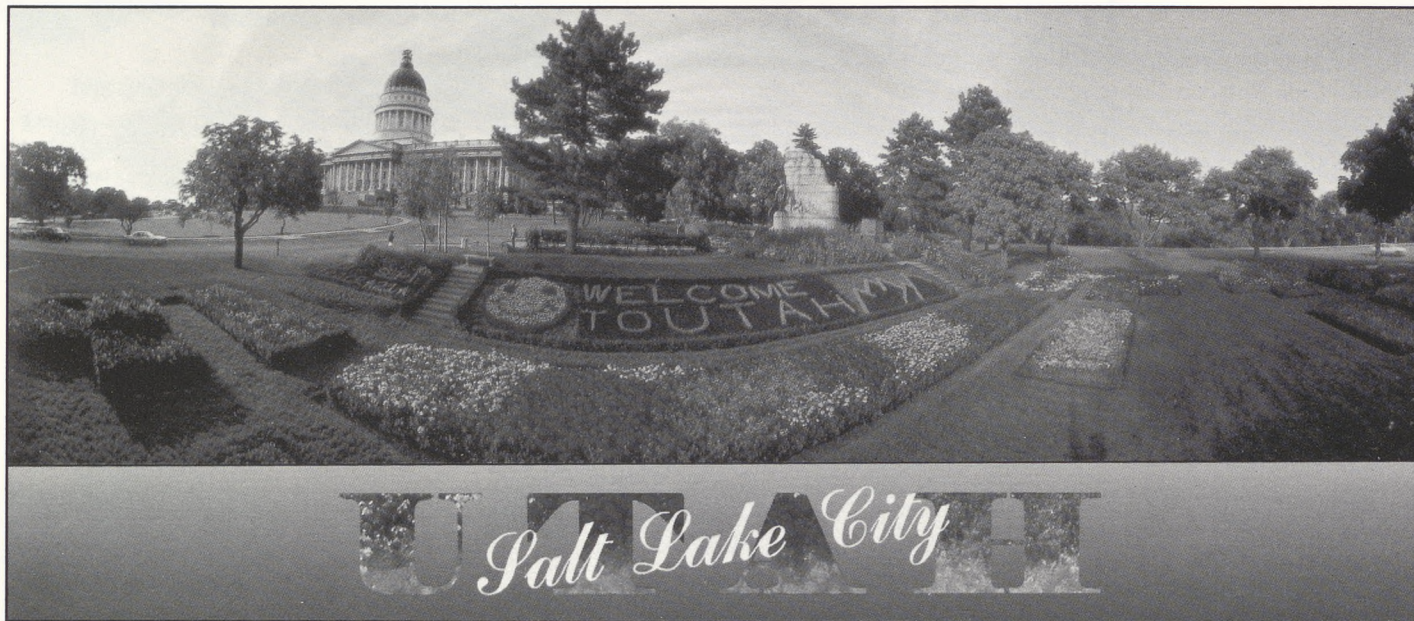
SELLING IT....PANORAMIC POSTCARDS

By Craig Moyer

In June 1994, I approached a local postcard and souvenir publisher with the idea of using some of my Hulcherama scenic panoramas in their publications. After a review of my portfolio, they purchased souvenir-related usage rights to three pans. Now, all three have just been released under their banner "Mountain West Panoramics" as 4" x 9 1/4" postcards. Photographing the scenes and getting them published is a story others might find interesting.

The image on one postcard features a panoramic shot of Zion National Park. Though trimmed from its original 360° down to about 270°, it still shows a great overall view of the park, including two major landmarks, Angel's Landing and the Great White Throne. I took this shot from a rocky trail 1,600 feet above the canyon floor on the way to Angel's Landing. The trail at times winds its way across steep bare sandstone faces only a yard or so wide with sheer drops on either side to the valley. At these points the trail is merely footholds carved in the sandstone with only a thick metal chain or wire rope (thoughtfully provided by the park service) to keep your balance. My Hulcher was securely fastened in my Tamrac camera backpack and my heavy Bogen tripod was slung over my shoulder on a strap, an unwieldy load at best.

I set the camera up on a very narrow section of the trail. Add to that a fear of heights and you have one photograph that would be difficult for me to duplicate. Reasoning that it would take a miracle to get me up there again, I stayed put for quite a while, shooting several rolls of Kodak's 120 Lumiere film as the sun set



One of the pan postcards distributed by Great Mountain West, with one of Craig's images.

behind the cliffs. (Of course, descending the trail with a flashlight is another matter that I won't get into now.)

Another postcard features a shot of the Utah State Capitol building and its flower gardens. In shooting this I used a technique that I've found almost imperative for shooting rotating-camera panoramics - *get the camera elevated*.

When I first began shooting pans with my Hulcher, I found to my dismay that most of my foregrounds were invariably just wide areas of ground close-up to the camera. The visually interesting things were happening above the horizontal centerline of the film. With most cameras you'd get around this by tilting the lens up slightly. With a rotating camera you generally want to keep the

camera level. If you tilt up to get more of the treetops or canyon walls you also get more of your feet and the tripod legs in on the backswing. One way to solve this problem is to get the camera right up there with the treetops and canyon walls. (Another way is with a shift lens, which I also use regularly.) Though not a skyscraper, I've configured an 11-foot Bogen light stand with a ball-head on top, on to which I attach my Hulcher with a long electrical remote. Even the modest 11-foot is sufficient to get above people's heads and not unintentionally feature the foreground as the most prominent part of the image.

In this shot, getting the camera elevated provided most of the impact. The flower garden is prominent which was my

intent, but the Capitol building, which would have been lost behind the elevated flower garden had the camera been at tripod level, is also a significant part of the image. And yes, that is my shadow at the lower right, holding the Hulcher on its stand.

The third postcard is my shot of Salt Lake City at sunset, the digital manipulation of which I detailed in the three part series in the IAPP magazine. To fit the proportions of the panoramic postcard it has been trimmed significantly on each side (it would have been 5 1/4" wider), but it retains the wide-screen aspect that traditional postcard images lack.

I took my portfolio of panoramic

SEE "POSTCARD" PAGE 19

POSTCARD FROM PAGE 18

transparencies to this particular company in part because I knew another photographer who had sold some photos to them. He provided me with the name of the person to contact and advised me of the rates the company had typically paid him. It took several months for them to decide, but in the end they did buy these three images.

These postcards, along with my posters of Salt Lake City and Delicate Arch at Aches National Park, are getting good exposure for the panoramic format and providing a good medium for the discussion of panoramic photography. My experiences with this postcard production have been very positive. Selling your images is a lot of work and takes much perseverance, but if you have something unique it usually pays off in satisfaction, and sometimes money, in the end.

VIRTUAL GALLERY FROM PAGE 17

funding. In a similar fashion to the 19th century, the 20th would feature images and equipment. The manufacturers of such cameras (Noblex, Linhof, Roundshot, Hulcherama, etc.) may indeed help fund the disc's production in order to be included on the disk.

There are a great many more ideas I have about this project, but would like to hear first from IAPP members to see who might be interested in participating in such an endeavor with me. Please call me at the National Archives 301-713-6711 ext. 326, You can fax me at the same location 301-713-6921 or E-mail me: Richard.Schneider@arch2.nara.gov. I look forward to hearing from any and all.

PANORAMIC Slide MOUNTS

Are you experiencing difficulty in finding the proper mounts for your panoramic images? Think Inc. is looking to expand it's current line of panoramic mounts and needs your help in determining which formats to add to their panoramic series. Support information on sleeving and filing systems is available.

Think Inc. is gathering information regarding sizes and quantities for the vast array of image sizes that are currently being shot. If demand for a particular format is high enough, the mounts will be added to the Pro-Dia series. Custom mounts are also available as well as custom printing.

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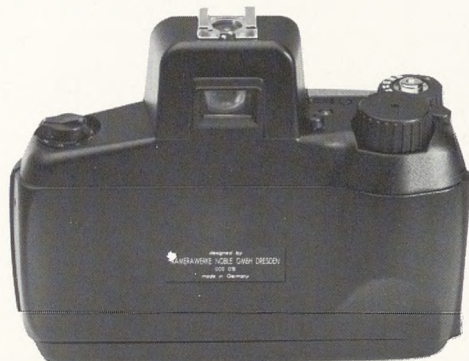
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THAT'S ONE BIG CIRKUT!

By Ron Klein

I have found a #22 cirkut camera in Skagway, Alaska. The camera is missing parts, but I have found most everything except the ring gear and lens. They may yet be found. When it is placed next to my #16, it makes the #16 look like a #8. Hey, we're talking big here!

Skagway, Alaska was the starting point for the Klondike Gold Rush of 1898. It rapidly grew from nothing to a town of 20,000. Today there are 700 people living year round. I found the camera in a warehouse full to the top with gold rush memorabilia. It's hard to believe, but it still has old steamer trunks inside that haven't been opened since the 1920's. The place is a real mess. Everything is strewn around, with stuff on top of stuff on top of stuff. I found the camera under an old couch with rotting carpet on it, and an old toilet bowl and a box of rusty pipe fittings were jammed into the side of the film magazine. It took thirty minutes to locate the camera itself. It was leaning against a blacksmith's forge, and full of mice droppings. The tripod legs appeared about ten yards away. If that wasn't enough it was starting to get dark so I had to quit. Believe me I'll be back this week.

As soon as I find more I'll let you know.

CONTRIBUTION INFORMATION

By Warren Wight

So you have this great article or photograph that you think other IAPP members would enjoy, or find interesting. But you think to yourself, maybe it's not good enough for our magazine. Well put that thought out of your mind and send it in for consideration in *Panorama*. We are always looking for articles, photographs, technical tips or other information related to panoramic imaging.

When putting together an issue of *Panorama*, I choose articles and such

based on many different criteria including; content, length, number of photographs included and what size they should be, among other things. Member contributions will always take precedence over nonmember contributions.

If your submission doesn't make the next issue, it doesn't mean it won't be used. If your article doesn't run after a couple issues, feel free give me a call.

For those of you with computers, PLEASE send me your story on floppy

disk as well as a hard copy. Just let me know what program the file was created in, IBM and Mac OK (if you send a Mac file, make sure it is on a High Density disk). You can E-Mail me those files too! Since my fax machine is on 24 hours a day (unless I am online) faxing me your story is another alternative.

The important thing is to send in those stories, pictures, etc. NOW. The sooner you send them in, the sooner they will be published in our magazine!

IAPP Web PAGE

By Warren Wight

Well, I have written all the code, and IAPP now has its own World Wide Web site! The address for the site is:

<http://www.magicnet.net/~warren/iapp.html>

It is linked to my personal home page, so if you have access to the World Wide Web, check out the IAPP pages, and while you are there check out my page too! My web address is:

<http://www.magicnet.net/~warren/>

If any of you IAPPer's have web pages (or need some created), send me your address and I will link it to the IAPP home page.

Apologies...

The panoramic photograph on pages 8 and 9 of the last issue of *Panorama*, was the victim of printer error. The pan Al Greening sent me was tack sharp and absolutely beautiful. But, when it was reduced down to size for the magazine, the halftone was awful.

My apologies to Al Greening.

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MEMBERS IN ACTION... SHOOTING PANS



Above: Kornelius Schorle setting up the "Cyclo Pan" atop the north tower, Golden Gate Bridge. (Photo by Jeff Weisenburger with a 35s Roundshot.)



Left: Joe & Marcella Strausbaugh with their #10 at the National Amateur Baseball Federation World Series '95, Miamisburg, Ohio.



Cirkuts at the Grand Canyon.

Left: Jim Johnson and his #10 cirkut. Far left: Jeff Weisenburger sets up his #5 cirkut.



Maung H. Win, full time wedding and portrait photographer, uses a Hulcher to get the "Big Group" shot at weddings.

To join IAPP CALL OR WRITE:

Addie Lorber
P.O. Box 2816
Boca Raton, FL 33427-2816
407-451-4622/407-361-0494 (fax)
Internet: CustomLab@aol.com

Send your name and address for membership information: \$40 North America. \$50 Elsewhere

Upcoming Issue Deadlines

Issue	Deadline
Jan/Feb '96	Dec 1
March/April '96	Feb 1
June/July '96	May 1
August/Sept '96	July 1

Please send in your stories, photographs, technical information, etc. to:

Warren and Patty Wight
644 Magnolia Drive
Maitland, FL 32751
407-339-3756
407-339-9501 (fax)
Internet: warren@magicnet.net

50" Roundshot Enlarger Is On Its Way

By Addie Lorber

Seitz Phototechnik and Custom Panoramic Lab are pleased to announce that the first 50" Roundshot enlarger will be installed and ready to service the panoramic community by the end of November. The enlarger will resemble the 20" enlarger, but will be larger, yet still only requires 64 square feet of darkroom space.

Technical specifications include a negative size 10" x 60" (yes, Cirkut shooters, we will be able to enlarge your negs). This will enable us to make a print up to 150 x 900 inches (the figures are correct, it is 900) in three horizontal

panels from the maximum negative size. Another possibility is for the users of other rotational cameras. For example, an image shot with the Roundshot Super Camera and a 180mm lens would give a negative approximately 44 inches long per 360°. We will be able to enlarge it to 50" x 75 feet in one piece. To our knowledge, this capability is historical because it is the first of its kind.

The images are razor sharp and crisp as we have the first print from the prototype in our lab. **It is a beautiful print 50"x 30 feet and it's available for all photographers and everyone interested to see and inspect.**

The enlarger has the ability to burn and dodge at up to 100 spots per negative with perfect consistency as it is totally electronically controlled. This is good news for Cirkut shooters as we will be able to make multiple prints same as contacts (1:1) but with consistent burning and dodging.

With electric imaging steadily improving, this enlarger is a very important part of panoramic photography as we know it. We are able to capture magnificent images from negatives sent in by our customers that electronic imaging has yet to equal. We believe that the ability to print those large mural panoramic photographs will be a shot of adrenaline to every panoramic photographer and we will be able to produce, print and display those beautiful and unique images for many generations to come.

Display Advertising Rates

Display rates are per issue.

Insert	\$250
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For more information contact:

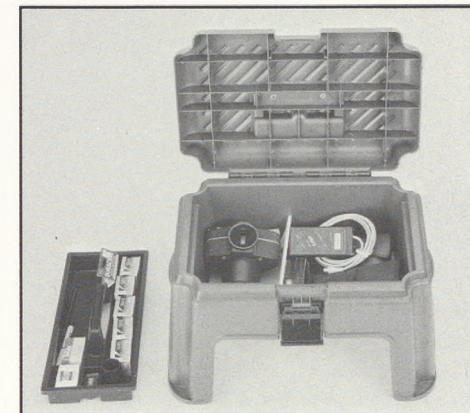
Warren Wight
 644 Magnolia Drive
 Maitland, FL 32751
 407-339-3756
 407-339-9501 (fax)
 warren@magicnet.net

The Perfect Roundshot Carrying Case

By Ron Tuttle

Knowing of my aversion to hand tools and physical labor, my wife was surprised when I returned from the local builders supply center with what appeared to be a new tool box. Looks are indeed deceiving.

This toolbox, made by Rubbermaid, seemed to be the perfect carrying case for my new Roundshot 35/35S. A small piece of foam rubber for padding, a scrap of foamcoar for a divider, and there it was...complete with carrying handle and a tray for small items such as film. Having been designed as a combination tool box/step stool, it provides the extra height I needed to see into the viewfinder when placing the Roundshot head high on a tripod (it also



The Rubbermaid toolbox with the Roundshot packed nicely inside.

provides a perfect seat when making the exposure).

All this for under 20 bucks...and it's 20% gray!

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