A taste of the late '40s through the early '60s found in amateur stereo slides

Views from a Grocery Store

Until now, this column has never included images that were made with a View-Master Personal or Mark II stereo camera. The absence of such images has not been an intentional exclusion, however, but was entirely due to the fact that no View-Master images had yet been submitted for use in this column by readers.

Actually, this lack of submissions is still true, as I came across the images reproduced below myself at a local photographic swap meet. The find consisted of seven or eight View-Master Personal reels bundled together as a group, and all of the images were of interiors or exteriors of supermarkets. There were several different bracketed exposures of most scenes, which reduced the total number of individual scenes to not all that many, and even with the bracketing, many scenes still had no properly exposed stereo pair.

Most of the images did not include any people, and while it is fun to see 1950s-era store shelves full of light bulbs or canned fruit, it's so much more enjoyable if an employee or customer is also included in the scene.

Still, a few gems were evident mixed in with the duds, so I purchased the set and have selected the two best views for reproduction below. Unfortunately, most of the reels were unlabeled, and the few images that were labeled included only the name of the store (like IGA or Piggly Wiggly), so I am not even sure if these images were taken locally or not.

The first view shows a store's meat department, and includes a butcher posing in his blood-stained apron. Some prior planning was apparently done for this shot—it doesn't appear that the photographer just walked in with an on-camera flash and snapped the shutter. Judging from the various shadows on the walls, and the fact that there were several other exposures of the same scene, I suspect that the photographer had set up a tripod and several off-camera lights or flash units.

The other view shows a woman who I believe was an employee (judging from her outfit) in the produce department proudly holding a cellophane-topped package of some unidentifiable item. Some Christmas decor is visible in the background, so I am assuming this shot was taken around then.

This column combines a love of stereo photography with a fondness for 1950s-era styling, design and decor by sharing amateur stereo slides shot in the "golden age" of the Stereo Realist—the late 1940s through the early 1960s. From clothing and hairstyles to home decor to modes of transportation, these frozen moments of time show what things were really like in the middle of the twentieth century. If you've found a classic 50s-era slide that you would like to share through this column, please send it to: Fifties Flavored Finds, 5610 SE 71st, Portland, OR 97206.

As space allows, we will select a couple of images to reproduce in each issue. This is not a contest—just a place to share and enjoy. Please limit your submission to a single slide. If the subject, date, location, photographer or other details are known, please send that along too, but we'll understand if it's not available. Please include return postage with your slide. Slides will be returned within 6 to 14 weeks, and while we'll treat your slide as carefully as our own, Stereo World and the NSA assume no responsibility for its safety.
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Front Cover:
The final camera designed by Zeiss Ikon for its single strip 3-D movie technology “Raumfilmverfahren System Zeiss Ikon” (with images turned 90° head to foot) is seen here shooting the 1953 film Plastischer Wiesenbummel (Octoberfest in 3-D) produced by Fritz Boehler. The history of the Zeiss system is illustrated with production photos and frame pairs in “Zeiss Ikon and Stereo Cinematography” by Dieter Lorenz.

Back Cover:
H.H. Bennett No. 1066, "Old Abe, the Wisconsin War Eagle." Stereographed here in the 1870s at the state capital building in Madison, the famous Civil War mascot was featured in a number of stereoviews of the period. To learn where else his image appears, see “Old Abe, Wisconsin’s Battle Eagle” by Dr. Peter H. Jacobsohn.
Long Lost 3-D Films

In this issue, we are finally running the second part of Dieter Lorenz’s historical research on Zeiss Ikon and stereo—this one on 3-D movie technology developed by the famous German company. The article on Zeiss Ikon still cameras, stereo adaptors, and viewers appeared in Vol. 29 No. 2. “Zeiss Ikon and Stereo Cinematography” was to have followed shortly after that, but too many articles that fit exquisitely in the available space (and with each other) arrived in a seductively steady stream about that time—making it far too easy to postpone the cinematography coverage through an unreasonable number of issues. But the article was well worth the wait, with its historic frame pairs from German WWII military training films (discovered under the ruins of a Dresden church 49 years after its destruction by allied bombs), later production photos from post war 3-D films, and a detailed history of Zeiss Ikon stereo cinema technology. This is material to be found outside German archival sources only in Stereo World.

Digital Fantasy?

Many of those who read “Digital Stereo and Moore’s Law” by John Hart in this issue will despair of any true digital stereo camera being manufactured soon due to the expense of design & production for such a specialized and currently limited market. But a look at the ad from Snap 3D in this issue, combined with SW articles over the past 3 years or so, reveals the impressive variety of inexpensive 3-D film cameras recently manufactured in China through the efforts of Allen Lo. These range from the assorted versions of the Loreo to the 3D Lens In A Cap and recent lenticular cameras sporting from five to two lenses.

The intriguing thought that some sort of “Digilo” (“Pixelo”?) may someday appear is hard to shake off. True, any digital 3-D camera near the low end consumer range of a Loreo would have its limitations. Non-zoom lenses and the most basic autofocus might be combined with the lack of any LCD screen, a movie mode or much in the way of exposure/speed choices. The resulting savings might make it possible to offer something like 5 megapixels per image for reasonable print pairs. And if stereo prints were the intended final product, the format could be square—saving on the size and cost of the sensors.

Unlike the mainstream brands, the Allen Lo related cameras already include a variety of 3-D print viewers. Software in the camera could create image files of transposed pairs with a dark border ready for high resolution digital printing on on 5x7 inch paper. I have no idea if such a camera could be marketed for under $600, or if it would encourage anybody to produce a “prosumer” version with more digital bells and whistles and bigger, better sensors with 7 or so megapixels per image. It’s probably not a fantasy that should make my Realist feel threatened anytime soon. But as one who lost a job of 22 years to the relentless growth of digital imaging, it’s at least a way to put a brighter spin on things.
Liberation 1944 in Stereo

Few amateur photographers documented the confusing, rumor filled days of late August, 1944 as Paris and surrounding areas were being liberated from Nazi occupation. More rare yet was an amateur stereographer on those dangerous streets. But Marcel Lecoufle had a sense of history, an early Verascope 40 loaded with Agfacolor film, and a bicycle. In both his hometown of Boissy Saint Leger and Paris he stereographed explosions of air attacks, damage from shelling and street fighting, wreckage of tanks and planes, and welcoming crowds around U.S. jeeps and troops.

He has shown his slides of those days many times as a member of the Stéréo Club Français, which published a selection of them in their October, 2004 Bulletin. After several weeks of cleaning and restoration, more of his historic images will appear in an upcoming issue of Stereo World along with a diary of the liberation of Boissy Saint Leger by his wife Suzanne.

The Original Williams

Competing with another photographer of the 1870s and '80s named Williams in Newport, Rhode Island, J.A. Williams promoted himself as the “Original” Williams, selling stereoviews of the town’s already famous resorts, luxury homes and public buildings to tourists. Our upcoming article by Logen C. Zimmerman follows Williams’ career and illustrates several examples of his work, including the legendary “Old Stone Mill” whose date and purpose sparked many debates over the years.

Ferrier on Paper

Early French stereographer Claude-Marie Ferrier is well known for his glass views of buildings, cityscapes and bridges. Less well known are his paper print views, identified in a scholarly article by John B. Cameron. The various styles, categories and sub-categories of Ferrier’s 1851-1861 paper views are identified with precision and illustrated using examples like the view of Notre-Dame behind the old Hotel Dieu in Paris.

Hey kids!

Stereo photography workshops can be fun, but seldom as much so as when the participants are 11 kids, ages 10 through 14. Author Stuart Stiles guided the young stereographers through the construction of paired single use cameras, then turned them loose on the campus of Orange County Community College in Middletown, New York. His upcoming article “Hey kids, stereo photography is out of this world!!” includes shots of and by the enthusiastic students.
Accidental Stereo—
with a Stereo Camera!

by Quentin Burke

Accidental stereo? Happenstance stereo? Unintentional stereo? Serendipitous stereo?
The stereo picture on this page seems to combine all of the offbeat stereo categories listed by Stereo World editor John Dennis. But what really makes this stereo pair all the more remarkable is that it is of the writer's own mother... as a teenager! And it emerged almost 70 years after it was taken.

Here's how it happened. My late father, Eric Keast Burke, started taking photographs in his teens, after receiving a stereo box camera as a birthday gift. He was also a collector, collecting all manner of photographic prints, books and equipment during a lifetime as a writer, photographer and photographic historian. He died in 1976. The family legend that "he never threw anything out" was validated in 1989 when on a trip to Australia I was able to assist in some "sorting out", a process that went on for another 12 years.

The "accidental" stereo he made of his future wife (Iris Lily Daniell) was unearthed while poking through a big, wooden box of family negatives. In different places in this box I came across two almost identical, grossly underexposed black and white negatives of a woman's profile. "Could they be a stereo pair?" I wondered.

I told my brother, Kerras, who had volunteered to sort and catalog the contents of the box back home in Melbourne, that I’d take the two negatives home to make prints and determine whether in fact we had a stereo pair here. I was dubious, as they were not packed with others of his stereo negatives, and they had been cut apart. All of Keast’s other stereo negatives were paired.

Back in California, I labored with the thin negatives in the darkroom, eventually wrestling passable images from them on Agfa TP-6 paper. I aligned them in the fixer and cross-eye viewed them under the safelight. Paydirt! What I had was a stereo pair!

I sent the mounted stereo back to Australia and asked mother to "scope it. "Do you know who this is?" I asked her. The answer came by return mail: "Me!"

Here is the story she related:

In 1919, Keast had come back from World War One, having served in the Mesopotamian desert (now Iraq) with the Australian army there and for a further year after the Armistice was signed in 1918.

Among those who were glad to see him return was Iris, to whom he was "the boy next door" who had later moved from a house on their street in Killara, N.S.W., and gone off to war. The families had known each other for years, with young Keast, an only child, enjoying the company of the much larg--

Intended for printing as a flat Silhouette in the Australasian Photo-Review, this stereo of Iris Lily Daniell was taken by Eric Keast Burke about 1921.
er family of Daniell children next door.

After the war the families saw each other again and the young people gathered occasionally in the summers at Mackerel Beach, where the Daniell family had a summer cottage. Access was by boat. One summer—probably in 1921—Keast and three friends arrived in a boat and set up camp in a tent nearby. "Keast came over one night and took pictures of all the family," mother recalled, "He had his camera set up on a big tripod. He used flash powder to take some of the photographs."

He didn't tell her at the time, but the photographs were destined to become part of an article he was writing for the Australasian Photo-Review (AP-R), a monthly publication edited by his father, Walter Burke, FRPS. Mother reports: "He didn't say the pictures were going to be published. It was a surprise." She had no recollection that a stereo photo was being taken, nor had she seen one later.

On a subsequent visit to Australia, I researched the files of the AP-R at the State Library of N.S.W. and found the article in the January 14, 1922 issue. It was titled "Some Notes on Flashlight Photography" and detailed how to take flash photos "with the new Kodak cartridges." Instructions were given on crushing and mixing the two components contained in the cartridge and arranging them in a "train" a few inches long "on a piece of tin or hardwood", to be set off with some of the "touch paper", also supplied.

After detailing the setup for flash photography for groups and portraiture, the author turned to other "variations that can be worked."

"Silhouettes are always interesting, and have a decided element of novelty," he wrote. "All that is necessary is to put your sitter between the camera and the flash, then suspend a thin white screen (stretched to avoid creases) between sitter and flash."

The article was illustrated with three silhouettes and three group flash photos. The silhouettes included one of Iris and one of her father. As the article states that the (Continued on page 39)
Zeiss Ikon and Stereo Cinematography
by Dieter Lorenz

In a recent issue (Vol. 29 No. 2), Stereo World published an article about the role of stereo photography at the Zeiss Ikon AG. The stereo history of this company would not be complete without covering the role of Zeiss Ikon in stereo cinematography.

Single and Dual Strip 3-D Films

For the projection of stereoscopic cinema films as well as for stereoscopic slide projections the polarizing technique spread since the 1930s. For stereoscopic cinema, two systems competed with each other: the single and the dual strip methods. As the names indicate, the two single images of the stereo pairs are either on the same or on two different film strips. Both systems have their advantages and their disadvantages.

The advantages of the single strip (see Table 1) are not only that just one camera and one projector are necessary but—and this is more important—both single images on the same strip are stably fixed to each other. In the two strip method, problems may arise if the strips do not run exactly synchronously. And even if this is guaranteed, problems may arise. If one strip is broken and some single images are removed, it is necessary to remove exactly the same number of partner images from the other strip. Otherwise the synchronization will get lost.

A severe disadvantage of the single strip stereoscopic film is that the stereo pairs are reduced to the size of one normal frame. This leads to smaller single images which need stronger magnification than the full size image of the two strip method. This reduces the brightness of the projected image which already is a problem because of the light loss caused by the polarizers in front of the projection lenses and in the viewer's glasses.

The development of the Stereoscopic Film Procedure "System Zeiss Ikon"

The involvement of Zeiss Ikon with the problems of 3-D cinema starts in 1935, when, in cooperation with the Physikalisch Technische Reichsanstalt (State Establishment for Physics and Technology) of Braunschweig, a stereoscopic highspeed cine camera system was developed for race finish photography at the Berlin Olympics of 1936. Zeiss Ikon used two 16mm film cameras with a mechanical link. The disadvantages of this two strip method may have inspired investigation into the single strip method.

For further developments this single strip method was preferred. The first experiments were done with a customary 35mm film camera with a prism attachment in front of the lens. That way, single, vertical images taking half of the film frame were produced (Fig. 1 sample "a" and Fig. 2). Independent from these experiments, lenticular film for appropriately adapted 16mm cameras was used for stereoscopic films. Probably the film used was a lenticular one similar to that which Agfa had developed for color film projection.

Results of both experiments were presented at the annual conference of the Deutsche Gesellschaft für photographische Forschung (German Society for Photographic Research) June 6, 1936 with silent, black and white films.

Since vertical images for the usual aspect ratio of cinema screens are really inappropriate, new prism attachments were developed for recording as well as for projection. These turned the stereo pairs by 90° to the running direction of the film. In this way, a horizontal format image was obtained. This new development was demonstrated to the Deutsche Gesellschaft für Stereoskopie (German Stereoscopic Society) and to the Deutsche Kinotechnische Gesellschaft (German Society for Cinema Technique) at Berlin May...
27th, 1937. The film showed there was in color.

At that time the single views were situated head to head (Fig. 1 sample “b”). The disadvantage of this was that when the frame line in the projector was adjusted, the single frames moved opposed. Therefore the next step was a change of the prism attachments so that the images turned by 90° were situated head to foot (Fig. 1 sample “c” and Fig. 3). In all these cases custom 35 mm film cameras and projectors were used with the appropriate attachments.

The first 3-D film shot with this equipment was titled *Zur Greifen nah* (Close to Grasp). It was shown for the first time December 5th, 1937 at the Ufa Palast am Zoo of Berlin and February 2nd, 1938 at the Hamburg Ufa-Palast. In 1939, shortly before World War II, another 3-D film was made: *Sechs Mädel* rollen ins Wochenend (Six Girls roll into the Weekend). This was thought for internal use only, though it was presented to the public March 20th, 1941 at the Tobis Haus of Berlin at a meeting of the Deutsche Gesellschaft für Stereoskopie (German Society of Stereoscopy).

Parallel to these developments for 35mm cinema film were those for 16mm film. No details beyond the fact of their existence survived the war and post war periods, when most equipment and records were lost.

**The Stereo Films of the Air Force and Marines and their Discovery**

The “Raumfilmverfahren System Zeiss Ikon” (Stereoscopic Film Method System Zeiss Ikon) for 35mm cinema film was reserved from the beginning of World War II for the armed forces and especially for the air force and marines. The literature states that about one hundred thousand meters of 3-D films were shot. These were mostly training films. Up to now only a few rolls of these have been discovered. This discovery, however, is a special story.

With the severe bombing of the city of Dresden February 13th and 14th, 1945, the famous Church of Our Lady was destroyed. It burned out and, due to the extreme heat, the stonework collapsed February 15th. It was long rumored that this fire was caused by spontaneous combustion of cinema film stored in the vaults of the church. This was not true, as official records confirm.

However, it is true that cinema film was stored in the vaults under the north-western and north-eastern towers, the stair towers E and G. This was confirmed when in 1994 the ruin was cleared for reconstruction. A witness who was there when this was discovered said that more than 400 cans with films had been found between the immured coffins. They were covered by meters of rubble from the collapsed vaults. The films under
The films were brought to the Bundesarchiv—Filmarchiv (Cinema Film Archive of the Federal Archive) at Berlin and copied from the highly inflammable nitro film to modern material. Details seen in these films embody military equipment (Fig. 4) and hands operating it (Fig. 5). Men in uniform are also seen in them (Fig. 6). According to the Film Archive of Berlin, this material came from the Reichsluftfahrtministerium (Ministry of the German Air Force), and a witness who had visited Dresden the day before the bombing recalled that the imaging department of the Reichsluftfahrtministeriums had been moved from Berlin to Dresden.

There is no doubt that the 3-D films discovered in the vaults of the Dresden Church of Our Lady were shot with the Zeiss Ikon stereo film equipment. Another informant knew that his late father, an employee of Zeiss Ikon at that time, was involved in a campaign in Italy where 3-D-films from tests of bomb aiming mechanisms were shot. This was done in Italy because of the fine weather conditions there.

The question is, why did the German Air force make use of stereoscopy for such projects even though it provided few advantages over 2-D films? Probably one should take into consideration the phrase "Total War," which was proclaimed by propaganda minister Joseph Goebbels in 1943. This resulted in the call-up of people who up to that time had been "UKM"—meaning "reserved". In order to maintain their UK status, some people tried to propose projects that would be declared militarily necessary. Such projects got the nickname "Süsslupine" (sweet lupine) from a typical project of this sort. The cultivation of lupine was chosen to guarantee food production, a plan which was never realized in practice. The filming of the bomb aiming mechanisms in 3-D was also probably a "Süsslupine" project. However, this is only speculation. If true, stereoscopy could have actually protected some people from being killed in the war.

A complete copy of another the north-western tower were roasted to coal in their cans.

In contrast, the films under the north-eastern tower survived, but in bad condition due to the decades of humidity. The cans were rusty and partly baked with the film material. Nevertheless a number of films could be saved, and among these were two rolls of three-dimensional ones.
Zeiss Ikon 3-D film was found in Berlin, in the stock of the former film archive of the German Democratic Republic. This was produced for the marines. Its title was *Koordinatensysteme* (Systems of Coordinates) (Fig. 7) with the sub title *Der Sternhimmel* (The sky of Stars). The original was a stereo color film while the remaining copy was in black and white. This film, produced by the Boehner Film company of Dresden (Fig. 8) which probably produced all former Zeiss Ikon stereo films, showed a number of constellations in 3-D (Fig. 9). Was this also a "Süsslupine" project?

**Post War Developments**

After the End of World War II the factories in Dresden and Stuttgart went separate ways caused by the political situation as already mentioned. In Dresden, Dr. Fritz Köber, who together with Dr. Otto Vierling was the developer of the pre war Zeiss Ikon stereo film system, prepared a report about a stereo film camera and a stereo film projector which included further development of the Zeiss Ikon single strip stereo film system. This paper was for the Sowjet Mili
tary Administration for Germany and did not lead to any production. Parts of this report are identi
cal with a later publication in 1953.

In Stuttgart, where Dr. Vierling had moved, the single strip method "*Raumfilmverfahren System Zeiss Ikon*" was taken up again based on the last pre war version with images turned 90° head to foot. The newly built equipment was used in 1953 for the production of a number of stereo films (Table 2). The producer again was Fritz Boehner who also had left Dresden and now lived in Hamburg. Figures 10-12 show some production photos from these films, and Figure 13 is a frame pair from the original single strip film "Plastischer Wiesenbummel".

In the early 1950s the first American stereo films came to German cinemas. These were dual strip 3-D films which led to a break-through of this method. The main reason was their higher brightness in comparison to the Zeiss one strip films which had smaller images—the single frames on the strip for projection measured only 10.3 x 14.5 mm—and required thus a stronger magnification resulting in less brightness of the projected picture.

This led to the breakdown of the Zeiss Ikon system, which can be shown by a concrete example. When Dr. Willy Pfaff in 1953 planned to produce a 3-D film about the Hummel figurines for their producer, the W. Goebel Porzellanfabrik, he planned to make it with Zeiss Ikon equipment. He had already worked with this company on other stereoscopic projects for years. Since the principals of the Goebel firm rejected this proposal and insisted on the use of the two strip method, Pfaff had to build his own cameras.

The Zeiss Ikon Company of Stuttgart gave up its system, of which today there are only very rare remains. One complete set of equipment consisting of a 3-D camera (Fig. 14) and a projection

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Table 2.

**Stereo Cinema Films of the "Raumfilmverfahren System Zeiss Ikon"

<table>
<thead>
<tr>
<th>Title</th>
<th>Customer</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zum Greifen nah (Close to Grasp)</td>
<td>Volksfursorge</td>
<td>1937</td>
</tr>
<tr>
<td>Sechs Mädels rollen ins Wochenend (Six Girls roll into Weekend)</td>
<td>Zeiss Ikon</td>
<td>1939</td>
</tr>
<tr>
<td>Plastische Vorstellung (Plastic Presentation)</td>
<td>WW</td>
<td>1953</td>
</tr>
<tr>
<td>Der Weiße Traum (The White Dream)</td>
<td>WW</td>
<td>1953</td>
</tr>
<tr>
<td>Der Wagen und sein Werk (The Car and its Factory)</td>
<td>WW</td>
<td>1953</td>
</tr>
<tr>
<td>Plastischer Wiesenbummel (Octoberfest in 3-D)</td>
<td>(Boehner-Film)</td>
<td>1953</td>
</tr>
</tbody>
</table>
lens appeared at a photographica auction at Cologne in April, 1994, and was bought by a private collector. Another 3-D Zeiss Ikon projection lens was saved for a museum of the DDR.

The Boehner company of Hamburg went out of business years ago, having produced no 3-D films since 1953.

There were other, different single strip methods for 3-D cinema, some of which were more successful than the Zeiss Ikon one but none permanently. At the beginning of the 1980s the Arri company of Munich introduced a panorama 3-D process for 35 mm film with single frames over/under.

In the U.S.A., probably at the same time, 3-D two strip films of the 1950s were copied on single strips side by side with the frames anamorphically compressed. The projection of these vertical frames with an anamorphic lens resulted again in horizontal images.

However, most of the dual strip systems also did not succeed permanently in cinemas. The only booming 3-D film system of our day is IMAX 3-D. This uses large images on screens of up to more than 15 by 20 meters. It uses two strips of 70 mm film with the single frames turned 90° to match the horizontal running direction of the film for 52 x 70 mm single images. This is high quality 3-D cinema, made by people who understand their business. The increase of the single frame from 10.3 x 14.5 mm from Zeiss Ikon to 52 x 70 mm is nearly fivefold, and shows the progress of about half a century. It is thought this new system will last longer, as well.

(Continued on page 36)
THE SOCIETY

News from the Stereoscopic Society of America

Ray Zone

2004 Avian Top 5 Views

Ernie Rairdin, Secretary of the Avian Print Folio, has reported on the top 5 views from that circuit for 2004. Ernie has supplied his report in the form of a list which names the Order, Photographer, View Title, and "Battling Average" of the votes submitted over the course of 2004:

1. Michael McEachern, "Cover Girls" .................................. 7.57
3. Ernie Rairdin, "Remein Butterfly" ................................. 6.62
4. Ernie Rairdin, "Roadside Vendor" ................................. 6.00
5. Ray Zone, "Spinosaurus" ........................................... 5.71

SSA Supper at Irving, Texas for NSA 2005 Convention

The menu for the SSA Supper this year is in keeping with its location deep in the heart of Texas: Fajita buffet (all you can eat). Beef, chicken and veggie fajitas served with guacamole, shredded cheese, and pico de gallo. Refried beans and Spanish rice. Served buffet style.

All this costs only $16 for members and prospective members alike. The SSA Dinner this year will be at the Mercado Juarez Mexican Cafe, offsite for the NSA Convention, on Thursday, July 14th at 7pm.

SSA 10th Stereo Card Exhibition

For those who would like to submit work to the 10th International Stereo Card Exhibition of the Stereoscopic Society of America, downloadable/printable PDF entry forms are available at:

Judges will be looking for original and artistic interpretations in a variety of subject matter. Consideration will be given also to accuracy of stereo mounting and appearance of card mount.

The Judges are: Terry Wilson, Int'l Judge and Stereo World Editor, Portland Oregon. Serving as Alternate Judge is Ernie Rairdin, Int'l Judge and Stereo Exhibitor, Cedar Rapids, Iowa.

This Exhibition will be conducted in accordance with the standards required and practices recommended by the Photographic Society of America. Acceptances received by PSA members in this exhibition are eligible for PSA Star Ratings, listing in the worldwide PSA Who's Who of Photography, and credited toward the PSA Distinctions PPSA and EPSA.

This Exhibition is open to any living photographer. Newcomers to stereography and international exhibitors are especially invited to submit their work. Each entrant may submit up to 4 views in the Holmes format, 3.5 x 7 inch stereo card only. Entries previously accepted in the SSA Exhibition are not eligible. The original image must be made by the entrant on photographic emulsion or acquired with a digital camera. All images must be original and may not incorporate elements produced by anyone else.

The entry fee is USD $8.00, which includes return of entries by First Class Mail to USA and Canada, and Small Packet Air elsewhere. Send entries to David & Linda Thompson, 1674 Umqua Rd., Woodburn, OR 97071 USA. Checks must be in US dollars and made out to Linda Thompson, currency will be accepted at entrant's risk in US Dollars.

Calendar

- Closing Date: July 9, 2005
- Judging Date: July 14, 2005
- Report Cards: July 19, 2005
- Return, total rejects: July 29, 2005
- All other returns: August 31, 2005
- Catalog Mailed: August 31, 2005
- Shipping of Awards: August 31, 2005

Awards

- Best of Show: PSA Gold Medal
- Best SSA Member: The Yellowfoot Award sponsored by Walter Dubronner
- Best Novice: Sponsored by the Hollywood Stereo Card Exhibition, SCSC. (To be eligible for the Novice Exhibitor Award, entrants must have received less than 18 acceptances in PSA recognized Exhibitions and must enter "novice" on the top of the entry form).
- 3 Judge's Choice: SSA Medals
- Best Portrait: The Keystone Award Sponsored by N. Bill Patterson
- Best Scenic: The Ray Bohman Award sponsored by John Dennis, Int'l Judge and Stereo World Editor, Portland Oregon. Serving as Alternate Judge is Ernie Rairdin, Int'l Judge and Stereo Exhibitor, Cedar Rapids, Iowa.

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- Best of Show: PSA Gold Medal
- Best SSA Member: The Yellowfoot Award sponsored by Walter Dubronner
- Best Novice: Sponsored by the Hollywood Stereo Card Exhibition, SCSC. (To be eligible for the Novice Exhibitor Award, entrants must have received less than 18 acceptances in PSA recognized Exhibitions and must enter "novice" on the top of the entry form).
- 3 Judge's Choice: SSA Medals
- Best Portrait: The Keystone Award Sponsored by N. Bill Patterson
- Best Scenic: The Ray Bohman Award sponsored by Ernie Rairdin
- Best Photojournalism: The Muscogee 3-D Award (depicting a person, place, thing or event of historical

"Cover Girls" by Michael McEachern took top honors in Avian Folio for 2004.
Old Abe
Wisconsin's Battle Eagle
by Dr. Peter H. Jacobsohn

Old Abe was the name that the soldiers of Company C, 8th Wisconsin Volunteer Infantry gave to their eagle mascot during the American Civil War. He was named for President Abraham Lincoln, commander-in-chief during the war years, 1861-1865. The eagle would become a legend that has echoes even today.

My interest and fascination with the story of Old Abe and the 8th Wisconsin began when I was asked to speak to my son's fifth grade class about the Civil War some 25 years ago. I have been a student of the Civil War since the centennial years, 1961-1965. It was my intent to educate young children about the war using historical accounts to which they could relate. My research led me to the story of Old Abe and I have included him in my lectures ever since. I had the honor of giving the dedicatory speech at the unveiling of an Old Abe statue near his origins. In addition I have a collection of memorabilia associated with Old Abe including several stereoviews.

Old Abe began life as a young eaglet in the north woods of Wisconsin. In early 1861 a band of Chippewa Indians had captured the eaglet after cutting down a white pine tree that contained an

“Color Guard of the 8th Wisconsin Infantry Regiment and their mascot taken just after the surrender of Vicksburg, Miss.”
H.H. Bennett No. 1060, "Old Abe, the Wisconsin War Eagle." Tan mount. Stereographed in the 1870s at the state capitol building in Madison. (An item on Old Abe previously appeared in Stereo World Vol. 7 No. 6.) All views from the author's collection.

The eagle's nest. As the story goes, the Indians traded the eagle to a local farmer (Dan McCann) for a bushel of corn. The farmer's family raised him as a pet. As the eagle grew and matured, the care and feeding of the bird became more of a burden than the family could handle comfortably.

In September of 1861 the eagle was sold for $2.50 to a company of volunteers from Eau Claire, Wisconsin that was organizing to go to war. They adopted him as their mascot, named him Old Abe and called themselves the Eau Claire Eagles. They would travel to Camp Randall in Madison, WI where the majority of the Union soldiers from Wisconsin were trained before going to war.

There the Eau Claire Eagles became Company C of the Eighth Regiment of Wisconsin Volunteer Infantry. A regiment consisted of 10 companies of approximately 100 men. At full strength the 8th Wisconsin consisted of about 1000 men. At Camp Randall, Old Abe
received a perch which consisted of a shield-shaped wooden plate above which rested a cross piece for the eagle to sit on. The shield was painted with the stars and stripes and was attached to a five foot pole. Photos of him usually show him on this perch or similar ones made for him through the years.

Although Old Abe remained with Company C, he quickly became the mascot of the entire regiment. When the regiment finished training and went to the front, Abe was carried on his perch in a place of honor in the very center of the front ranks alongside the U.S. and regimental flags. The position of “eagle-bearer” was considered a high honor in the 8th Wisconsin. The Eagle Regiment, as the Eighth Wisconsin became known, served for the duration of the War. It served in the western theater of operations in campaigns that opened the Mississippi River to Federal domination. Old Abe survived 37 battles and skirmishes and earned a place in American Civil War history.

Over the years the wartime exploits of Old Abe, real, exaggerated or imagined, captured public attention and entered the realm of folklore and legend. He has been credited with disrupting enemy attacks, diving on the enemy and leading his troops to victory. It is said that he delivered airborne messages, retrieved maps from behind enemy lines, and had a price on his head by Confederate commanders. It can be said with certainty, however, that Old Abe was an inspiration to the men who served with him.

The end of the war did not end Old Abe’s service to his country. He was given a home in the state capitol building in Madison where he lived another 17 years while becoming Wisconsin’s ambassador to the Centennial Exposition in Philadelphia in 1876 where a number of stereoviews were taken of him.

During the late 1870s while Old Abe was in residence in the state capitol building, pioneer Wisconsin photographer H. H. Bennett traveled to Madison and photographed the eagle. The Bennett...
stereograph catalog of 1883 lists 5 different views. Although I have only been able to acquire one view, the others are variations of the eagle as posed on the barrel of a cannon. Old Abe fell victim to two fires in the state capitol. The first in 1881 caused his death due to smoke inhalation. The second in 1904 claimed his stuffed and mounted remains. A replica is still on display.

Today there are still visible reminders. After seeing the eagle in Eau Claire, Jerome Increase Case adopted his likeness as part of his firm's logo. Every piece of equipment produced by the J. I. Case Company has a stamping of Old Abe on it. The 101st Airborne Division, known as the "Screaming Eagles", depicts the head of Old Abe on its left shoulder patch.

References
Bennett, H.H., Complete Stereograph List, 1883
Rath, Sara, Pioneer Photographer, Wisconsin's H.H. Bennett, 1979
Zeitlin, Richard, Old Abe the War Eagle, 1986

The J.I. Case company used Old Abe standing on a globe as its logo on all the equipment it produced. This cast iron statue used by Case dealers for promotion is displayed in the Wisconsin Automotive Museum. (For a short time in the 1920s, Case made cars.)

Sheet music for an 1870s song about Old Abe.
Create Stereo Blazing Fast

by Michael Beech

The “actions” feature is one of the better time saving Photoshop features. It saves time by “remembering” how you do repetitious tasks and then replaying them whenever needed. Using the actions function can slash the amount of time required to create stereo pairs, anaglyphs, or any other multi-step repetitive activity. All you have to do is use the action palette to record your commands as you create a stereo pair. Once that is done, you can apply those steps automatically, mistake free, to any other image.

As you might imagine, there are also dedicated software packages available to handle these tasks, such as PokeSkope Pro (PokeSkope is a trademark of Graphic Media Research) and the freeware Stereo Photo Maker (Copyright by Masuji SUTO and David Sykes). These dedicated programs are quite effective, fast, and comprehensive. They have various nice capabilities that are quite worthwhile to have at hand, plus each has features not found in the other. I find that they add versatility and quick action for many tasks, especially for modifying on screen viewing modes. If you don’t mind working within their layout restrictions, everything is fine and you may never need anything else.

However, if you want unlimited control and flexibility, you may find them restricting. When I am working in Photoshop adjusting color, contrast, brightness, etc., I feel I have more control and precision if I continue on and finish the layout right there in Photoshop. And, by using the Photoshop actions function, similar production speed is obtained.

Starting from a pair of digital images and using this procedure you can create a stereo card, ready to print, in well under 5 minutes, including all adjustments. This will give you more time to assemble 3-D sets that you might otherwise never have time to create. Also, you can devote more time to reding, realigning, and perfecting an image, knowing that the once long (and mistake fraught) assembly process will now only take seconds.

My aim throughout this article is threefold:
• To give you Photoshop command sets to automatically prepare various stereo images, including anaglyphs.
• To demonstrate a great method to quickly get your images into excellent alignment.
• To take you through a training exercise that will build several useful action files and give you the skills needed to build additional action files of your own.

There are two distinct steps in creating any stereographic image; the creative activity and the time consuming, tedious, rote, mechanical workup. The mechanical workup is always the same, so this process can be completely automated. But, to explain how this works, let’s start with the creative step, as that should be done in such a manner that automation can take over cleanly at the appropriate point.

Adobe Photoshop 7 for Windows commands are used in the examples that follow. The word “click” always refers to a “left-click.”

The Creative Phase

You will, of course, start with two digital images—a left image and a right image, however acquired. We will pick up after you have them digitized and in the computer. If you took the pictures with a single digital camera on a slide bar, you have an advantage in that the bottom edges of the two images are probably perfectly matched. If you captured the photos with a twin-digicam system, or scanned them in from film, you probably have some orientation work you need to perform. We will assume the worst.

Load the left image into the Photoshop work area.

Make all your appearance adjustments, such as color correction, levels, sharpness, etc. Save the file with its adjustments but leave the original in the work area. Do likewise with the right image. Now we have both the left and right images (chips) on the screen, each in its own window.

With the Move Tool, drag the left image and drop it into the right image window. You will note that, in the layers palette, a new layer, “Layer 1,” has been created. Do NOT rename the layer. Continue with the Move Tool and fit the image into the window, allowing the bottom and sides of the image to “Snap” into alignment (turn on the “Snap to” function under View / Snap to / Document bounds). This will be a good match if your picture was made with a digital camera on a slide-bar. Otherwise, just get it roughly in place for the moment.

You are done with the left image, so you should close it to protect it.
The right image window is now a composite containing both images, so, to avoid accidentally closing this modified image over the original, save it with a different name, such as: oldname-C. (The added “C” could stand for “Composite”). My files are numbered sequentially as they come out of the camera, so I rename this composite image with both numbers, like this: P0045&46-C (that is, image 45 & 46). By numbering in that fashion I always know which two original images were used in the creation of any composite or stereo image.

Layer 1 should still be selected (highlighted in the layers palette). In the layers palette, click on the “Opacity” slider and set the opacity of Layer 1 to about 50%.

Bringing the two images into exact, dead-level alignment can be done in two quick and easy steps—a preliminary alignment and a level alignment. Note: Those who use a digital camera on a slide bar can sometimes skip the Preliminary and Level Alignment steps that follow, but it is a good idea to check anyway. Bumps do happen.

Preliminary Alignment

It helps to enlarge the image for this and the next two steps. Then, with the Move Tool still selected, click once anywhere in the image area to activate the arrow keys. You can then use the arrow keys to move Layer 1 exactly into place. But where is “exactly in place?” Find a contrasting dot, spot, angle, or whatever, anywhere close to the right or left edge is best. Use the arrow keys to line-up that spot on Layer 1 (left image) exactly over the same spot on the Background layer (right image). Move the layer left, right, up, or down until you have just that point in perfect register. No other spot on the two images has to be perfectly in register. See Figure 1 where the corner of the brown boxcar at the right has been aligned.

Level Alignment

Look along the opposite edge or as far away as you can from your lined up spots for vertical image misalignment. If you find a dot, spot, corner, line, or whatever, that is above/below its corresponding object in the other image even by a tiny amount, then you will have to “Rotate” Layer 1. The white RR Crossing sign at the left of Figure 1 is an example of extreme level misalignment. It sometimes helps to pull a horizontal guide line onto the image because corresponding objects can be separated fairly far apart horizontally. Here is how to rotate the layer:

In the Edit tab, select Transform, and then choose Rotate. A solid selection line will appear around your image and a little square will appear in the middle of each edge. Enlarge the window if you can’t see the selection line because it might be hidden under the window border.

In the exact center of the image you will find a tiny crosshair representing the center of rotation. Use your pointing device (mouse, pen, whatever) to drag that little square over until it is exactly over the point you have placed in perfect register. This crosshair has already been moved into place in Figure 1.

Now you should drag the appropriate edge square up or down until the misaligned point on the active layer (Layer 1) is level with (not necessarily on top of) the corresponding point on the Background layer. Figure 2 shows the misalignment corrected by dragging the left edge down.

Press Enter (Return, on the Mac.) when you are satisfied. Within a few moments Layer 1 will rebuild itself in the corrected orientation. 

Recheck your work. If the mis-
alignment was serious, you may have to redo the Preliminary Alignment and the Level Alignment to get the alignment just as you want it.

**Setting the Stereo Window**

Once the two layers are perfectly level and at the same height, use ONLY the left and right arrow keys from then on. Locate the near-point—the object in your image which was the absolute nearest thing to the camera when the picture was captured. Use only the left or right arrow keys (usually the left arrow key) to move Layer 1 until this nearest object is in perfect register over the same object in the Background layer. After they are in register, every click of the LEFT arrow key will move the photo deeper behind the window. I would suggest at least 2 left clicks if you want the near point to be close to the window, 10 or more left clicks if it should be farther back. If you have reason to make the object project through the window, you just move the near object in Layer 1 (the left eye image) to the right, instead.

**Cropping**

In the layers palette, use the opacity slider to restore 100% opacity to Layer 1. In the layers palette, next to the Background layer, click on the “eye.” The eye will disappear and the Background layer will become invisible. Now you can see the exact edges of Layer 1. Figure 3 shows how this might look. Use the Crop Tool to crop the image to suit your taste, but don’t include any of the transparent areas around the edges, primarily found on the right. Figure 4 shows crop lines in place. After completing cropping, click on the “eye” to make the Background layer visible again. CAUTION: Don’t fail to click the “eye” back on to make the Background layer visible or it won’t be visible in the final stereo pair, which is, of course, a bad thing. At this point, the creative process is mostly completed. Do NOT merge or flatten the layers. Save the completed “composite” image in Photoshop format (the default) but leave a copy on the screen. The remainder of the creation of the stereo image can be automated.

**Automating the Mechanical Workup**

From this point Photoshop can remember and re-execute, on any composite image like the one you just made, every step required to manufacture parallel pairs, cross-eyed pairs, left-right-left triplets (triptychs), and anaglyphs—including attaching logos and copyright notices. And, it will do it in just seconds, error free, once you show it how. CAUTION: For the automation to always work properly, you must standardize creation of the composite image by always dragging the left image into the right image window. That way your two layers are correctly oriented in the order that the automation will look for them. The layer names must also be consistent, always. Automation requires that you do not rename any layers.

**Creating an Action**

Click on the “Create new action” icon at the bottom of the actions palette (It’s the one that looks like a piece of paper with a corner folded up, next to the trash can.). A dialog box will appear. Name the new action “MakeStereo.” There are certain commands that should generally be included at the start of each action to ensure the safety of your original composite image and we will put them in first. Once you have clicked on “Record,” execute the following commands.

**Cmd. 1:** Press the letter “d.” This resets the swatches to black foreground and white background.

This is a precaution to make sure the canvas will be white when it expands (to save on printer ink)
because when the canvas extends, the canvas color used will be the background color that is currently shown at the bottom of the toolbox in the foreground/background color swatches.

Cmd. 2: Click on Image / Duplicate. In the dialog box which appears, click on OK. A new image window will appear containing a duplicate of your original.

Cmd. 3: Move the new window aside and click on the original image to make it the active window.

Cmd. 4: Select File / Close. This command closes the original to keep it safe. Stop recording by clicking on the Stop playing/recording (square) button. The net effect of commands 2 through 4 was to create a duplicate work file with a new name and to close your valuable composite original and tuck it safely away.

Onscreen should be only the new image named after your original, plus the word "copy," e.g.; originalname copy. Now is the time to test this action:

Close the copy without saving it. No images are on the screen.

Load into the work area the composite image you made earlier. In the actions palette, scroll to find the new action (MakeStereo) you just created. Click on the line "MakeStereo" (the title line of the action you just made) to highlight it.

Click on the Run selection (triangle) button at the bottom of the actions palette.

The action will begin to run. When it is done, the only thing on the screen should be a copy file containing both layers from your original composite.

Making a Parallel 3-D Pair

The following steps will assemble the two image layers into a parallel stereo card. The duplicate file, "originalname copy," should still be onscreen in the work area, ready for you to issue the commands which will complete the process of turning it into a 3-D stereograph.

In the actions palette, click on the triangle button at the left of the title line of the MakeStereo action. This button displays/hides all the commands in the action. Click on it to make all the commands display and then highlight the last command, which is "Close."

Click on the Begin recording (round) button at the bottom of the actions palette.

The first step will be to resize the image to the final chip size that you wish to use. You probably have a size you prefer, perhaps between 2.75 and 3.5 inches wide. For this example 3 inches will be used. A ppi of 300 will be used for the resolution.

Execute the following commands:

Cmd. 5: To change the image size, select Image / Image Size. In the window which appears:

- Change the Document Size: Width to 3 inches.
- Change the Resolution to 300 ppi.
- Put a check mark in the Resample Image box.
- Click on "OK."

The canvas size will be changed next. Doing this in several steps makes it easy to control the placement of the two images.

(Continued on page 33)
Originally created in 1998 as a self-tutorial by stereographer Ron Labbe, the one-minute stereoscopic video Mousetrapped would undergo considerable evolution to make its way to the giant IMAX 3D screen.

"The animation itself was basically the result of a project I assigned to myself to learn 3D Studio MAX," says Labbe. "I'd had the idea to recreate the classic Mousetrap board game, since all the elements and animation would be fairly basic. One of my motivations was a yearly contest put on by the New England 3D Studio User's Group. So the animation was rendered, edited with Adobe Premiere and a stereo soundtrack was laid on with Jon Golden providing the sounds. A few other sounds were obtained from sound effects disks I had... not all the highest quality. But, of course, I had no idea where this was heading!"

Up to that time Ron Labbe had been a successful stereo photographer and producer of 3-D slide programs, notably "Space Shots" an award-winning show which played at many public schools and museums in the 1980s.

Mousetrapped won First Prize in the local User's Group animation contest. Labbe then submitted it as an entry in the 1998 3D Movie/Video Competition sponsored by the Stereo Club of Southern California (SCSC) where it again won first place. The video entries were played back at SCSC screenings from alternating field VHS tapes through a VRex projector which demultiplexed the interlaced left and right-eye fields to project them at full video resolution on a silver screen where they were viewed with conventional polarizing 3-D glasses.

It was at the SCSC awards screening that I first saw Mousetrapped. Later, as I discovered Large Format (LF) 15/70mm 3-D films, I kept thinking about Mousetrapped. What would it look like on the giant IMAX 3D screen? In 2001 I decided to produce Mousetrapped as an LF 3-D film. When I informed Ron Labbe of my intention, he thought I had lost my mind. I acquired permission from Fisher-Price to use the Mousetrap game in a film and began to research the LF production pipeline for computer-generated 3-D movies.

Ron's original AVI files were rendered at video resolution (720 by 480 pixels). An IMAX film frame is 15 perforations wide on 70mm film, 9 times the size of 35mm, and runs horizontally through the projector at 24 fps. IMAX resolution is computed at 3k by 4k, 12 million pixels in every frame of film. A conventional 35mm frame has an estimated 2k resolution. Mousetrapped would have to be rendered again at a significantly higher resolution to be recorded to 65mm negative film for IMAX 3D.

In 2001, Ben Stassen, producer of the LF nWave 3-D films Encounter in the Third Dimension, Alien Adventure and The Haunted Castle, informed me that he would be happy to donate the film recording to 65mm. At a retail price of 3 dollars a frame and about 2900 film frames total, that was a very generous contribution. When Stassen saw a videotape of Mousetrapped, he pointed out that the horizontal movement would create "strobing" or flashing on the giant screen. Since Ron was to re-render the entire film, several scenes were changed to show the point-of-view of the blue mouse traveling across the board to mini-
mize strobing and accentuate the 3-D.

In addition, I suggested to Ron that we add a brief coda after the end credits in which the just-deceased mouse reappears briefly to "zap" the audience with a final 3-D blast before the film closes. This was actually a cinematic quote from film history referencing the moment at the end of Edwin S. Porter's classic 1902 film The Great Train Robbery when the bandit levels a revolver at the audience and fires. Martin Scorsese also used a similar device at the end of Goodfellas with Joe Pesci firing at the audience. Ron and I agreed, while laughing, to change the title to A Better M-.

With the changes and additions to the film it would now run 90 seconds. To render the LF 3-D version of the film, Ron purchased a brand new super-charged Dell computer loaded with RAM.

NWave film recordist Ken Semer was to record the digital files on a CRT laser recorder at the nWave Burbank facility. Ken specified that the LF digital files should be 8 Bit TIFF files rendered at 3k or 3072 x 2242. Since the film was CG the 3k size would be sufficient and would save time in rendering. One frame of film was recorded as a test and when it came back the colors looked very fine and rich. Ron then rendered A Better Mousetrap in separate left and right eye versions on his new Dell computer at the new resolution and delivered the entire film to me on 8 DVDs.

A single thousand foot roll of Kodak 5246 65mm color negative film was then used to record both the left eye and right eye digital files for the film. RPG Productions in Burbank processed the film at CFI and made a single "one-light" work print on 70mm Kodak 2393 Vision Premiere release stock. I previewed the left and right eye prints individually in 2D at the small RPG LF screening room in Burbank which is not equipped to project dual-band 3-D.

It was time to make the 6-track surround sound track for the film. As a safety to ensure frame accurate time-code for sound recording a 3/4 video tape with a time code window was made in telecine from the left eye pass of the film at Crest National in Hollywood. There were 39 different sound effects as discrete WAV files that Ron and Jon Golden had assembled in QuickTime Player for the video version.

Jon Golden flew out to Los Angeles for the 6-channel sound mix which we assembled at GDH sound studio that was run by his old friend Gordon Hookalo. Gordon had originally worked on the sound mix for Ron's 3-D slide program "Space Shots" (also called "The Third Dimension"). I brought the sound files into the studio on a CD along with the original Edit Decision List (EDL) for sound. The 6-channel 5.1 sound was mixed over the course of a full day in a state-of-the-art THX room and recorded to two DA-88 audio tapes as well as a CD-ROM for safety.

The ability for Mannel sound to move spatially through the room is quite impressive. With the IMAX system there is a sub-woofer and speaker directly behind the screen, a left and right speaker at the front of the room and a left and right speaker in the back. Jon, Gordon and I took full advantage of this to make sounds move through three-dimensional space.
The somewhat nervous star.
©2003 Studio 3D

The fearless diver.
©2003 Studio 3D

in accompanying on-screen actions.

"The sound will totally rock the IMAX theaters," says Jon. "It's a departure from the original stereo mix, with old SFX samples. Things come at you now, and you see and hear them come at you. Things go away from you or whiz by left to right... all in 5.1"

A couple of final steps had to be taken to prepare the sound track for projection in IMAX theaters. I sent one of the DA-88 tapes up to IMAX in Mississauga, Canada so that the sound could be processed with IMAX's proprietary encoding, as well as "pulled up" from 29.97 video speed to run precisely at 24 fps film speed. IMAX delivered back to me two DA-88 tapes and a CD (DDP-I) with the encoded sound track that IMAX had delivered to me.

On December 8, 2003 Ron and I, along with David Starkman, Robert and Marilyn Bloomberg, SCSC President Philip Steinman and IMAX Senior VP David Keighley watched *A Better Mousetrap* projected in 3-D on the giant screen at DKPI/70mm Inc. in Santa Monica. The film had its industry premiere on April 28, 2004 at the Large Format Cinema Association (LFCA) Film Festival and Conference in Los Angeles at the Universal City IMAX theater where it was very well received. *A Better Mousetrap* is included in the "World's First" LF 3-D Film Festival taking place July 13, 2005 at the Dallas IMAX theater in conjunction with the annual National Stereoscopic Association convention. Ron Labbe and Jon Golden will be on hand to field questions from the audience regarding the making of the film.
New Books in Lewis & Clark 3-D Series

Two new 3-D books in the series of View-Master album, book and CD-ROM productions observing the 200th anniversary of the Lewis & Clark expedition have been published by NSA member Charley Van Pelt. The first is *Chief Joseph and the Nez Perce War of 1877 / Crazy Horse, Sacred Warrior of the Sioux*.

While shooting stereo for the Lewis & Clark View-Master series, Charlie frequently encountered historic sites related to the Indian conflicts of the late 1800s in the Great Plains and the Northwest. Two names regularly stood out—Chief Joseph of the Nez Perce and Crazy Horse of the Sioux. Each was an outstanding leader—both with a common goal of protecting their people and homeland from the increasing western migration of the white man.

The combination of scenic and historical sites that would produce interesting 3-D photo possibilities, and a great story to go with the images, prompted him to do the research and spend several weeks doing 3-D photography. The result is a new 36 page book with 54 stereos, plus text and maps, highlighting the locations and events surrounding these two great Indian leaders.

At the same time, a revised and reedited version of the original *Lewis & Clark 3-D Reference Album* is being published. Because of quantity requirements, it was not feasible, at this time, to produce companion View-Master Reels to go with the *Chief Joseph / Crazy Horse* book, but the 3-D images and text in the Lewis & Clark book do correspond to the scenes in the current *Lewis & Clark View-Master Reels*. Both 3-D Books are 36-page, 6 3/4 x 9 3/4 inches, in full color.

The stereo images are in the standard five inch wide format and may be viewed with the LOREO folding 3-D viewer or lorgnette viewers.

Both books will be on sale at the NSA 2005 Convention and Trade Fair in Irving, Texas; or available directly from Charley Van Pelt, 1424 E. Mountain St., Glendale, CA 91207. For further information, Phone/FAX (818) 243-5636 or visit www.charleyvanpelt3d.com. The Books are $5.00 each and the LOREO folding Viewer is $2.00. (Add $2.50 for shipping).

Hope for Consumer Lenticular Prints!

With no consumer level lenticular print service available in the western hemisphere for some time now, many owners of three and four lens stereo cameras have given up on the thought of ever using them again. But help may now be on the way from some dedicated lenticular 3-D specialists.

Snap 3D, a recent newcomer to the industry, has announced that it is now providing reliable, cost effective lenticular printing, lenticular business cards, and new 3-D cameras. The firm is owned and operated by 3-D professionals and enthusiasts and has a direct link to the Hong Kong manufacturing firm owned by Allen Lo, inventor of the photographic emulsion method of lenticular printing.

Clearly aware of consumer problems associated with recently failed lenticular companies, Snap 3D is publicizing up front a policy of returning both film and money to customers in the event of any disruption of service. They also emphasize that the firm has no affiliation with any other lenticular printing company past or present.

Snap 3D offers 3-D lenticular prints from all of the three and four lens cameras of the past such as Image Tech, Nimslo, Nishika, etc. Prints are available in all the standard sizes along with reprints and enlargements from existing negatives in both reflective and transparency formats. Printing of full film rolls is offered at a special rate. Also available are new 3-D cameras including a single use disposable, a two lens reloadable, a five lens consumer camera and two versions of a five lens professional camera. For more information visit www.snap3D.com or phone (814) 209-0059.
First Digital Anaglyph Contest Winners Announced

Shahrokh Dabiri, contributor of the article "Golab, the Fragrant Water" in SW Vol. 30 No. 5, has been very busy in the meantime. A fan of all things anaglyphic, he created, on his own, the first international Digital Anaglyph Contest in April of 2005. Via the internet, especially through newsgroups like photo-3d and ISU3D as well as through local clubs, he promoted the idea and listed entry rules and awards.

In fact, the contest was free to anyone interested in emailing him in Iran up to two anaglyphic stereos of under 500Kb each. Entries were judged on technique, subject, clarity, depth and overall beauty. 2D-3D conversions, phantograms and software generated images were welcome along with photo-3d products.

As Mr. Dabiri explained, "This is an open contest. The goal is to promote anaglyph art to the world. The competition is called the Dabiri Award. The Dabiri Award is sponsored by me, your friend and fellow 3D enthusiast, Shahrokh Dabiri. This is a non-profitmaking competition. My only wish is to encourage Anaglyph makers to produce perfect shots. I believe the anaglyph format is the best and easiest way to spread stereoscopy around the world!"

Besides the Dabiri Award (an engraved cup, handmade in Esfahan, Iran), other sponsors joined to offer additional awards, including the Loreo company www.loreo.com (a Loreo 3D Lens in a Cap set + Loreo Photokit MKII set), Dr. Imre Zsolnai-Nagy www.conversion3d.fw.hu (two beautiful cups for the second and third placed entrants), Mr. Faramarz Gahremanifar www.stereoscopy.20m.com (four nice standard stereo card viewers), and Mr. Allan Silliphant www.anachrome.com (10 pairs of beautiful anaglyphic spectacles).

Judges were Dr. Shahrokh Dabiri, Mr. Faramarz Gahremanifar and Mrs. Maryam Ahstarynasab.

Not only are the top 10 winners exhibited on the web, but all 135 entries from all over the world are included on the website http://dabiriaward2005.uw.hu/.

Phantogram Collection Published

Fans of phantograms now have an entire new book full of them to check out. Phantograms from Nature, Western USA, by Barry Rothstein has just been published with 32 anaglyph phantograms of natural subjects taken around the western United States, the 11" x 14" book includes an instructional page on how to take phantograms outdoors in natural settings so that the final anaglyphs rise off the page like objects placed on a book laying flat on a table.

Phantograms from Nature, Western USA, ISBN 0-9769494-0-7, is published by 3dDigitalPhoto.com (trade name Phantom 3D®). It can be ordered from the publisher (www.3ddigitalphoto.com) or at Berezin Stereo Photography Products (www.berezin.com/3d/) for $36.00.

Polar Express on Schedule

A train may be facing the threat of murderous budget cuts this year, but one famous passenger train has made a big profit. Imax and Warner Bros. have announced that The Polar Express 3D, the highest grossing and most successful IMAX DMR (Digital Re-mastering) release to date, will return to IMAX theaters in November, 2005. (See SW Vol. 30 No. 5, page 5.) First released on November 10, 2004, the film broke virtually every box-office record for a digitally re-mastered Hollywood film in IMAX's format, and set the record for the highest grossing week in IMAX's 35-year history. The IMAX 3D version of The Polar Express has grossed an estimated $45 million to date.

The Top Ten Anaglyphs

1st Place
"St. Jacques" by Frans Van de Poele
Hon. Mention
"Sky" by Imre Zsolnai-Nagy

2nd Place
"Polar Express" by Barry Rothstein
"Winnie the Pooh's Picnic" by Ray Zone

3rd Place
"In the cave" by Wojtek Rychlik
"Anaglyph of the Fragrant Water" by Barry Rothstein

Hon. Mention
"Fairlyland Mushrooms" by Barry Rothstein
"Fairlyland Mushrooms" by Barry Rothstein

Ten Anaglyphs

1st Place
"In Debt" by Owen C Western
"Sky" by Imre Zsolnai-Nagy

2nd Place
"Sharing The Rose" by David W Kesner
"Fairlyland Mushrooms" by Barry Rothstein

3rd Place
"Jupiter" by Ray Zone
"Homestead" by John A Stuart
Ghosts Haunt New Tissue Views

by John Dennis

Combining 19th century daguerreotypes, "spirit" stereo-views and tissues, Los Angeles photographer Claudia Kunin has created a unique set of images for a New York gallery show. Kunin's own photos are rephotographed as background reflections in classic daguerreotypes, the resulting images converted to 3-D pairs which are printed and mounted as a set of tinted tissue views titled "Ghost Stories"

The original daguerreotype portraits are from the artist's collection as well as others. She uses a 60mm macro lens on a 35mm Nikon and a strong flash in order to shoot both the daguerreotype and the reflected print at f32 to keep both images in focus. Regarding the finished tissue views, she explains that people find their own ghost stories in the images, including things that she never noticed herself. "Most of the people in these photos have been closed and forgotten in their cases for over 150 years. There is the sense that they are glad to be seen."

The show in which "Ghost Stories" is featured is "New Art/Redefining the Photograph" at the John Stevenson Gallery, 338 W 23rd St., New York, NY 10011, (212)-352-0070, running through summer 2005. For samples of Kunin's work, see www.claudiakunin.com/main_frame_art.html.

Carl's Clean & Clear Archival Sleeves

Polypropylene Acid Free

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Stereo World Volume 31, Number 1 25
As the bell rang in the new year, I wondered what had changed in Digital 3-D since I wrote a review on this subject for the Ohio Stereo Photographic Society Stereogram a couple of years ago. Did Moore’s Law, an evolutionary prediction in which computer chips double in the number of transistors every 18 months, apply to cameras and output devices relevant to stereo photography? Have a significant number of people made digital imaging a central part of their stereoscopic adventures? What’s new and useful for acquiring and displaying 3-D images?

Film and Digital are Different

There has been endless and often acrimonious debate on the relative merits of film and digital imaging in the realm of serious amateur, or “prosumer”, stereo photography. The argument often seems to focus on pixel counts, line pairs resolved by some fuzzy method (or observer), and that great nebulousness, the “quality” of the experience. Film does have more dynamic range, the ability to resolve details simultaneously in very bright and very dim areas, than most digital cameras. The exceptions are very expensive digital single lens reflexes (DSLRs) like the Canon 1Ds, or specialty units that have cooled electronic sensors.

Film is also undeniably better at capturing information in subtle textures with low contrast. Digital images from prosumer cameras, on the other hand, retain edge detail very well because there is no grain noise. Even relatively low-resolution digital pictures can look snappy. Personally, I still use both media. However, in terms of numbers of images, I now make far more, per month, with my Sony V1/V3 twin-camera digital rigs.

Film is wonderful for highly detailed landscapes, for example, while digital works very well for photo-journalism, sports, and scientific types of shooting where the 3-D effect is robust, with less reliance on subtle textures for its generation.

Beyond the diversity in how images look, it is generally agreed that film and digital “handle” much differently. Digital shooting is faster, cheaper, and particularly well suited to the subjects that it is best for (as listed above), where rapid-fire picture taking and quick processing in software helps to capture the moments (with emphasis on the plural!). Some would argue that the slower pace of film photography leads to more thought and better compositions—again suggesting that film is great for subjects like landscapes, where there can often be enough time for such ruminations.

Digital Image Processing of Stereo Pairs

What is undisputed, and most relevant for attracting newcomers into 3-D, is the advent of free (or very inexpensive) stereo image-registration programs that permit quick and accurate manipulation of left-right pairs, including easy adjustments to remove common inaccuracies that may be introduced in one’s cameras, such as rotation or tilt errors, slight sizing disparities arising from unequal zoom lens settings, for example, and undesirable keystone effects. With film, only small rotation and tilt can be easily dealt with in the process of mounting stereo slides. Aligning a pair of left-right images and setting the stereo window in software takes just a few seconds per pair, and is accomplished without introducing dust, fingerprints, or scratches, the avoidance of which requires quite tedious handling of film chips.

Software manipulation of digital pairs circumvents worries about parallax in mounting jigs, and digital output eliminates the need to purchase and store heavy and expensive anti-Newton glass slide-mounts. The digital pairs can be written onto 100-year-lifetime Azo DVDs for archival storage, sent out to the new high-resolution ink jet printers to make stereo-cards, or instantly reformatted for anaglyph, shutterglass, or mirror-assisted viewing. Since one can experiment with various outputs in a what-you-see-is-what-you-get environment, these programs greatly accelerate the learning curve. Some programs also permit quick batch-processing of the hordes of images that can be obtained in a rapid-fire twin-camera shooting session.

Of course, film shooters can also take advantage of such efficient and easy-to-use software by scanning their slides or negatives. Flatbed scanners do a decent job on 35mm chips, depending on what...
you want to do with the results. If you intend to make large prints, archive your films onto digital media (which I have done with all my 1970s era Kodachromes, some of which are going magenta), or output crops to projectors or film recorders, it is better to use a dedicated film scanner which will capture more detail (even resolving the film grain) and have enough dynamic range to deal with high contrast slides. Nikon and Minolta make excellent 4000 - 5400 dpi scanners. The increase in cost over a decent flat-bed is justified if one has a lot of film to digitize.

In 2003 only a couple of stereo registration programs were available, costing $100 or so. These were clumsy and not very accurate. For example, one could only correct for rotation errors with much-too-big 1-degree steps. Now, fortunately, there are several great tools available. The free-ware program Stereophoto Maker* (or SPM) stands out, as it has an easy to use interface, intuitive controls, strong batch processing facilities, and enough sophisticated features, like automatic stereo-card output, adjustable anaglyph settings, and aids for phantogram generation, to keep even the more advanced user happy. Other good programs include the free-ware Anabuilder and the inexpensive Pokescope suite, while specialized codes like CombineZ* and 3DPhotoPro* help with more complex and non-standard procedures involved with such things as image-stack composing and lenticular-print interpolations. Programs like SPM are great for managing and registering image pairs, and for outputting a variety of stereo formats. None of the codes listed here are very good at image processing (sharpening, cloning, healing, burning, dodging, color correcting, etc.). One also needs a good program like PaintShopPro or Photoshop in the digital toolbox.

Acquisition Systems

Digital cameras have indeed trended along the lines of Moore’s law. In 2003 good prosumer still cameras sported 3 to 4 Megapixels. Now the norm is 5 to 8. How many does one need? That depends on what you want to output. To make 3.5” (per-side) stereo-cards using a state-of-the-art digital printer (see Display Systems below), a 600 dpi, or denser, print-stream is required in order to get optimum results. To meet this specification, 6 or 7 total megapixels per left/right side are needed, though a good quality 5 megapixel shot will be OK if you don’t have to crop a lot. When using digital projectors (also discussed below), which will probably max out at 2 megapixels (true HDTV) for each of 3 colors, 5 megapixels or more in the source image is recommended. This still allows for some cropping room and takes into account the acknowledged factor-of-two Bayer color-grid multiplier, where the effective resolution of RGGG color grid sensor is about \( \frac{1}{2} \) its stated pixel count. To make prints larger than 8”x10” for use with mirror viewers, or in big anaglyphs, 8 megapixels (per side) will be best. For web publishing, 2 or 3 megapixels are probably sufficient.

Unfortunately, not all megapixels are created equal. Cameras like the Sony V1, V3, F828, F92-P9200, Canon G5/G6, etc, suffer varying but significant degrees of electronic noise arising from the small individual pixel size that accompanies the packing of so many sites onto a small, cost-effective sensor. Such noise is accentuated by running these cameras at a high ISO (“film speed”) setting, and/or making longer (\( \frac{1}{15} \) and slower) exposures. In summary, all small-sensor (1/1.8, 2/3.0) digital cameras work best in bright light with moderate to fast shutter speeds, and when set at the lowest ISO possible! To get better low-light performance, one needs to use a camera with a larger sensor of the so-called 4/3, APS, or Full Frame variety, where instead of 3 or 4 micron-wide photo sites, there are 6 - 9 micron detectors. Such large-size sensors only appear in DSLR cameras.

These are bigger, heavier, and more expensive than consumer cameras such as those listed above. However, street prices of less than $700 each have recently appeared for good 6 megapixel APS-size-sensor cameras (like the Canon Rebel, Pentax *stDS, Nikon D70). The arrival of the 8 megapixel Canon 350D, and announcements of forthcoming Nikon “entry-level” DSLRs signifies falling prices and higher quality. For clean silky-smooth images, especially with low light and mid-ISO, the DSLR is the best way to go. For bright-light, low ISO shooting, good prosumer cameras come close in image quality.

There still are not any commercial major-brand digital twin-lens stereo cameras. The market for ordinary digital cameras is huge, now far outstripping film-camera sales. Canon expects to sell almost 2 million DSLRs in 2005, dominated by the 300D and 350D*. The combination of the normally upright one) and provide a range of stereo bases while allowing access to the cameras’ ports, batteries, and storage cards.

Fig. 1. An inverted-mount SonyV3 - LANC system. The controller provides buttons for power-up/reset and power-down, zoom, pre-focus/set-exposure, trigger, and time-lapse. The Z-bar should allow for trimming (small tilt correction of one camera, usually the normally upright one) and provide a range of stereo bases while allowing access to the cameras’ ports, batteries, and storage cards.
pared to the much smaller estimated potential for 3-D use, it is unlikely the big companies will sink development funds and assembly line startup costs into producing a true twin-lens stereo still camera like the Realist or RBT. Pentax did market a “3-D still camera” (e.g., the Optio 750Z), but all it does is facilitate two-shot pairs using the “cha-cha” method by indicating what to do on its LCD panel. So far, there have been two successful approaches to digital 3-D acquisition: a) creating twin-camera setups that are fired together using parallel-wired shutter buttons\(^1\) or their remote control ports\(^2\), or b) using a single digital camera with a beam-splitter ("Pentax" or "Tri-Delta")\(^3\) or a twin-lens optic ("Loreo")\(^4\) for putting two images down on the single sensor.

Non-DSLR twin-cameras, such as that in figure 1, generically (though perhaps not universally) suffer from phase drift\(^5\). The CPU operating cycles of the two cameras drift slowly with respect to one another. Thus, even if the shutter buttons are pushed exactly at the same time (by parallel-wiring the shutter switches or pulsing the cameras’ remote ports simultaneously) the actual shutter opening will not be exactly synchronous. However, if the twins are started up at the same moment in time, synchronized firing by either method will usually lead to synchronized image capture, with differences as small as \(1/1000\) of a second or better, but only for several minutes. At the end of this period, most camera pairs will have drifted apart by up to \(1/30\) of a second, a lag that is unsuitable for most shots other than still-lifes. So, either hard-wiring or remote-port triggering can work, but you must power down and restart your cameras every few minutes by using the remote port, or by having the power-up button switches parallel-wired too. There is also a small probability of a way-out-of-sync shot, even if the cameras are started together. I call this error type-I\(^6\). There is also a finite probability that even if you trigger the cameras’ power-up lines at the same moment, they won’t come up exactly in sync. I call this error type-II.

So how does one operate such a twin? You power-cycle your cameras, which have had their power circuits hardwired in parallel, every few minutes, and live with the two errors, which typically occur only a few percent of the time. An alternative is to use Rob Crockett’s LANC-protocol remote controller\(^7\) for Sony still cameras having the remote accessory “acc” port. This ingenious controller starts the cameras together and triggers them together, but also displays the current operating cycle lag/lead on a small LCD panel. Using this readout you can entirely avoid errors of type-ii. If after power-up the lag reading is over \(1/1000\) sec., say, try the off-on power-cycle again. You can minimize errors of type-1 by demanding that the sync lag/lead be really small. For example, if it’s \(1/3000\) on the LANC screen, then the probability of a type-I misfire is about 1%. As the indicated lag/lead rises to \(1/300\), the chance of getting a shot with a \(1/30\) sync discrepancy rises to 10%\(^8\). The point is that with the LANC you know where you stand and can take corrective (restart) actions as required. The LANC system\(^9\) is also better than a hard-wire system\(^10\), because no warranty-voiding camera modifications are required!

Most DSLRs are “shooter-priority” devices. This means that the shutter button or the remote-port-pulse interrupts the camera’s CPU directly. Thus DSLRs do not seem to be subject to the same phase drift that leads to type-I and type-II errors in prosumer cameras. However, DSLRs are more complex mechanical devices than the small(er consumer-cams. There are big mirrors to raise, and relatively heavy shutter curtains to move (compared with the tiny blades on a mini-digital). All this leads to an electromechanical sync error when DSLRs are triggered in parallel.

Good results can be obtained, but there will be an occasional misfire with poor synchronization. Typically this occurs less than 5% of the time\(^11\), a number that is not much different from the misfire rate for film-based twin-camera rigs.

Flash synchronization is another difficult problem for digital (and film) twins. Flash triggers are usually sent out when a camera’s shutter first opens, i.e., on the “leading edge”. This puts more severe sync requirements on the system. If the master camera (i.e., the one that sets off the flash) is a little early, then the flash may go off before...
the slave's shutter is open—leading to a blank image in the slave. It would be better if the master camera's flash could be triggered in the middle of the shutter period, but that's not how it is. Methods to deal with this problem have been perfected by Rob Crockett for the LANC/Sony system and for DSLRs. The gist of the idea is that the LANC controller, or in the case of a DSLR (or film SLR) an auxiliary “Magic Flash” circuit triggers the external flash on whichever shutter gate or hot-shoe pulse is the latest in time. This eliminates the problem of blank frames that would otherwise occur when the master's shutter precedes the slave's. Provided the degree of synchronization of the two shutters is smaller than the shutter opening time (by some factor between √2 and 1), the use of flash with digital twins is highly reliable.

Beyond synchronization difficulties, digital twin-cameras, like all twins, can have stereo-base issues. It is most desirable that the base be adjustable, but the minimum base can be too large, depending on how the cameras are mounted. Certain cameras, like a parallel-wired Sony P200 have a nice short 2 inch minimum base. These also have a shutter sync of about 0.01 seconds or better in the parallel wired configuration due to the fast response time of the camera. Unfortunately this camera is a bit weak on important photographic features like aperture selection and priority modes. The LANC Sony-V1/V3 twins have a minimum separation of about 3.2 inches in the horizontally-inverted (or so-called Z-bracket) version pictured here. Big DSLRs have relatively large 4.5 inch+ minimum bases, unless cumbersome beamsplitters are used. Large lens separations may be suitable for some types of photography, but are problematic for close-ups of people and other “near” subjects. In these instances it may be necessary to mount the cameras base-to-base, which can be very effective for producing portrait-mode pairs.

The alternative, that avoids synchronization, flash, and most minimum-base issues involves the use of a beamsplitter or a dual axis twin-lens on a single digital camera. Until digital cameras got up to 7+ megapixels, such applications were problematic because of the requirement of having 3+ megapixels per side to be considered useful. I have seen some very good results from Larry Heyda's tri-delt system. The others (Pentax, Loreo) produce tall and narrow images that are good for web-pubs, but not for other displays like dual monitors or projection where the intrinsic aspect ratio is horizontal 4:3 or 16:9. The tri-delt produces an odd layout on the sensor, but SPML's has a facility to immediately rectify it into a parallel pair in a single step. A little sensor space is wasted by blur between the pairs making up the images, but not much. Sync and flash are guaranteed. The images appear quite sharp and of good quality for most applications consistent with 3 - 4 megapixels per side. One restriction is that because the adapter is over the lens, and the images are half-frame (per side), the effective focal length is about doubled.

Most of the less expensive prosumer digital cameras start out at around 38mm (35mm film equivalent). Thus the tri-delt field of view will be roughly equivalent to a 70mm lens on a traditional 35mm camera. This may work well in many situations, but perhaps not all. The tri-delt adapter probably will not function effectively on an ultra-wide (e.g. 16mm or 20mm in 35mm equivalent) lens.

I have pointed out things to look out for, but do not mean to paint a bleak picture. Digital twins and single splitter-rigs work great most of the time. You can use real-time preview to adjust your shots (which is universally better than the shoot-then-process film scenario). You can take thousands, even tens of thousands of pairs per year, and process them all in a few evenings. You can throw away the duds and end up with some spectacular shots. This is the paradigm of digital 3-D.

Display Systems

Here is where Moore's Law has failed. Perhaps this is no surprise, since display has always been the Achilles Heel of 3-D photography. Unfortunately the digital revolution has not yet come up with a good solution to the viewing "problem", as we still need aids and tricks to get it done. Here is where we seem to stand:

A very good single-person active display is with two monitors and a single mirror. There are no ghosts, no light losses, no distortions, and no glasses. An incredibly
wide field of view is possible (up to 90 degrees!), so viewing at the ortho-point is easily attained. There is a sweet spot, i.e. a particular position that offers the best viewing, but it’s an inch or two across, very forgiving vertically, independent of reasonable head tilt, and is easily found. The one-side-flipped dual-display single-mirror mode is supported by SPM (for both stills and video). One can present sequences of pairs in this mode and even zoom and pan the images.

Another good one or two-person display is with shutter-glasses and a single fast-refresh CRT monitor. This method uses special electronic liquid crystal glasses, has minor ghosting and large light loss (approaching 3 stops), but has no critical head position requirements. The technology has been a little spotty in both software and hardware, but NVidia graphics cards with stereo output ports for shutter-glasses are supported directly by SPM. Patience and a facility with installing and managing driver software is recommended. A dream is to have shutter-glasses work with large (e.g. 45 or 60 inch diagonal) panel displays. Plasma and LCD panels are far to slow to be effective, but watch out for the SEDs coming out this year. They may just be fast enough.

Another decent single-person display uses dual monitors and a beamsplitter, along with polarized glasses. Only LCD computer displays having 45 degree intrinsic polarization work well here. Minor ghosts and moderate light losses arise, but there is a wide sweet spot. Availability and costs may be a problem, but you can build one yourself with large beamsplitters from Precision Glass Optics or other suppliers. Beware that not all LCD monitors have the requisite 45 degree polarization.

Autostereo lenticular and parallel-barrier monitors are available. My own experience and that of others I trust that these are dim, lacking in resolution (unless you have a lot of money), and have a limited and hard to acquire sweet spot.

The good static display uses digital prints with mirrors. Variations with one (my method, see first item above), two (Wheatstone’s original, or James Watt’s modern version), or four (from David Lee) front surface mirrors allow viewing of left-right pairs. Excellent anaglyph prints can also be relatively easily made in SPM, Photoshop, or Anabuilder, among many options. These are usually viewed with red-cyan glasses and can be very effective, but the degree of success can depend on the color content of the original pair. All such prints can be made at very high quality by a modern archival printer like the Epson R800.

A few digital shooters make real slides using a film recorder and then use standard hand-viewing or slide projection equipment for the presentation. I have seen output from a ProPalette 8000 that looks great for computer graphics (cgi) and remarkably good for those hard-to-do low contrast textural images. Such slides are probably better than “shoot your monitor”, which only works well if you have an expensive 2048x1556 CRT display. It has been demonstrated that film recorder output can reliably be cut and placed directly into pin registered slide mounts—thus avoiding the micro manipulations that in part make normal slide preparation tedious. For hand-viewing, film recorder output is quite good, but it’s not quite like viewing original transparencies. Film recorders are also useful for adding a few digital images, like titles or photoshopped pairs, to an otherwise analog slide show. The down-side is that this is a disappearing technology, and the long-term availability of parts, service, and software may become problematic. The upside is that because of this, the equipment is relatively inexpensive.

Projection

Digital projection using polarized beams (one for each eye) has the implicit advantages over traditional slide projection of enhanced brightness and truer color, motion effects (including video), no dust or dirt, no jams, accurate and repeatable corner-to-corner sharpness, no slide-tray limits on numbers, no slide-fading over time, and easier setup (using shift & zoom lenses). But Mr. Moore hasn’t helped much here yet either. Though resolution has doubled in terms of total pixels, from an XGA standard in 2003 to the widespread availability of SXGA+ units in 2005, this has not come without a sizable cost hit. There have, however, been great improvements in terms of image tonality and dynamic range across the board. Prices are falling slowly to the point where you can get a very good (new) XGA (1024x768) projector for a street price of about $1000. But high-end digital projection is still an expensive proposition, especially since one needs two units, one for each side. Here are some observations:

How much light do you need? The traditional Ektographic Slide Projector with an f3.5 lens puts out about 1200 lumens. This is just an intensity measure and is here-
Thus, to equal the movies in wide "home-screen" (27 square feet) and through polarized glasses it will look pretty weak and uninspiring. A 2500 lumen digital projector will be good at up to 10 feet or so, depending on room darkening. To get a real slap-in-the-face type projection onto a fifteen foot wide screen with passive polarization, one needs a 5000 - 6000 lumen unit. The sun-similar color temperature helps, as well as the eye's logarithmic response, so that in a really dark room 2500 lumens of arc-light can look OK on a 15 foot wide high-gain screen, and will certainly be jazzier than a slide projector.

What about resolution? Unfortunately, this takes us back to the subtle issues of film vs. digital. Remember, digital does well with edges and is snappily bright. Slides do well with subtle textures and have slightly better dynamic range (although the new projectors with around 3000:1 contrast ratios come quite close). Putting all else aside, how far away from a digital projector do you have to be before it looks smooth and clean? Sit too close and you can see artifacts or even the dreaded screen-door-effect where pixel borders come into view. Back away from the screen and things appear better because human eye acuity is limited and one loses the ability to discern the defects. I find that an XGA (1024 pixels wide) projection looks really good if I stand, conservatively, about 17 or 18 feet back from a 6 foot wide screen. Note that our response resolution, as opposed to brightness, is pretty linear. So a 1400 wide (SXGA+) projection will look really good at 12 to 13 feet (conservatively), 1600x1200 (UXGA) projection will be great at 10+ feet, and 2048 wide QXGA (or 1920 wide HDTV) will look neat at 8.5 feet.

So, it all comes down to where do you sit? At the 2004 NSA convention, for example, they had a 12 foot screen, and the slide projectors were about 65 feet back. People sat anywhere from the projector to 10 feet (estimated) away from the 12 foot screen. Thus, the average viewing distance in units of screen-width was 3.2! Thus, for many people the XGA digital projection looked (detail-wise) just as good as the 35mm slides because more than half the people (in a full house) were sitting 3 or more screen widths back. Of course some prefer to sit closer than 3X. But for home or amateur shows I think that about 2X is a reasonable first-row distance. If you make the seating closer, it gets real crowded up near the screen and extreme viewing-angle effects (like non-uniform lighting) arise for anyone more than a screen-width (or less) off the central axis. So, it seems to me that SXGA+ (1400x1050) is quite ideal for digital projection. Because the cost of current digital projectors goes up incredibly fast with resolution, the small linear decrease in sitting distance you get by going to UXGA (currently $30K each) or QXGA (currently $150K each) is certainly not worth it. This is not to say the XGA projection is bad, it's just all a matter of degree and subject matter. Some slides demand detail (like landscapes, for example), others thrive on action and effect and may not be on the screen long enough for any detail issues to become apparent.

Mr. Moore hasn't really impact-ed the projector market yet because the technologies are complex (arc lamps, fancy X-cube beamsplitters and dichroic mirrors), and there has been little competition for the DLP® (light mirror, by Texas Instrument) and LCD™ (liquid crystal panel display, primarily by Epson and Sanyo) technologies. However, Canon, the premiere manufacturer of digital cameras, has just come out with a new and cheaper technology that uses reflective CMOS panels. These have great color. Polarization is a problem, but should the new Canon Realis SX50® projector take off, it will force the other companies to lower prices and increase performance! Another approach is to use the polarized beams in LCD projectors along with retarders and polarization shifters in order to boost the light output by cutting polarizer losses by about 1 full stop. Even though these fancy retarder-polarizers cost about $1200 per pair, that is still a lot less money than going to an expensive dual-lamp projector in order to get desired light levels. Under the other hand, I am not sure how the image quality of a good LCD will stand up to that from a 2500:1
contrast DLP. In the long term it is unlikely there will ever be any cost-effective projectors with greater than HD or UXGA resolution, since HDTV is where the market is. Fortunately, the above arguments suggest that such are unnecessary for home or club use.

The Future?

In the two years since 2003, we have seen digital 3-D stage a sort of mini-revolution. Rob Crockett has sold over 200 LANC controllers for digital twin cameras, and Matsuji Suto's SPM site has recorded over 30,000 enquiries. People are taking up the sport!

Venues for digital 3-D presentation, primarily on the web, have multiplied, and digital projection has become standard at national conventions and many stereo club meetings.

What's in the future? High Definition 3-D video was not reviewed here, but is coming. Presentation systems and software are available for video stereo. There will be more acceptance and use of digital projection for motion-effect slide shows. There will be increased use of digital acquisition, processing, and presentation in new areas such as photo microscopy and extreme macro-photography where, as illustrated in figure 5, depth of field problems can be circumvented digitally. But most importantly, digital represents a new and simple paradigm that enables young enthusiasts to easily get involved in and learn about stereo photography. For this reason alone digital stereo should be supported and encouraged, in spite of its limitations, which will only erode with time. Many people are out there working towards this goal by making innovations in software and refining practical and effective hardware. Their efforts are most appreciated.

John Hart is Professor of Atmospheric and Oceanic Sciences at the University of Colorado, Boulder, hart@tack.colorado.edu. (A preliminary version of this particular article appeared in the Ohio Stereo Photography Society Stereogram in April 2005.)

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Create Stereo Blazing Fast  (Continued from page 19)

Cmd. 6: To widen the canvas size, select Image / Canvas Size:
Click in the anchor box which contains an arrow pointing to the right—the box will go blank and the arrows will change to show that the canvas will be extended to the left.

The Relative box must NOT have a check mark in it. If it does, un-check it.

Change the Width to 6.05 inches and click on “OK.” The extra .05 inches is the width of the separation bar that will be created between the images. Just so you can clearly see what you’ll be doing next, select View / Fit on Screen. (The zoom command doesn’t record and you can do it whenever you like.)

Cmd. 7: Select the Move Tool. Hold down the Shift key and use the Move Tool to drag Layer 1 to the left until it “snaps” into place against the left edge of the canvas (you did turn on the “snap to” function, didn’t you?). A separation bar .05 inches wide will be visible between the images. Now, let’s finish the canvas size.

Cmd. 8: To change the height of the canvas, select Image / Canvas Size:
Click in the bottom, center box with the down pointing arrow. It will go blank, indicating that the canvas will be expanded upward.

Put a check mark in the Relative box - the Width and Height will change to 0 (zero).

Set the units to inches, if they aren’t already.

Put .1 (that’s 1/10th inch) in the Height box and click on “OK.” This will leave 1/10th of an inch border above the photos.

Cmd. 9: To change the canvas height to its final size, select Image / Canvas Size:
Click in the top, center anchor box with the up pointing arrow to expand the canvas size downward.

The Relative box is still checked.

Change the Height to .6 inches and click on “OK.” This will add .6/10ths of an inch of white space to the bottom of the canvas, where you can add a title later. Option: If you want to make your cards a standard size instead, then you would un-check the Relative box and enter your standard card height. Note: I sometimes add the title to the composite image and have created an action (not shown here) to help with that process. That way the title never has to be retyped.

Cmd. 10: One final time, select Image / Canvas Size. For our example, the canvas will be sized to 7 inches wide, similar to a stereo card.

Un-check the Relative box.

Change the Width to 7 inches and click on “OK.” This adds about 1/2 inch of space to each side of the stereo pair.

Stop Recording: To end recording the action:
Click on the Stop playing / recording (square) button in the actions palette.

Discard (Close without saving) the image created while you executed the above commands. Don’t worry, the image will be recreated in seconds when you play the action in the next step.

Playing the Action: To use the newly recorded action, start with a blank work space:

Load the composite file again.
In the actions palette, scroll to the title line “MakeStereo” and highlight it.

Click on the Play selection (triangle) button. The commands will be replayed on the current file and, in a flash, you’ll have a stereo card.

Creating a Copyright Notice
The automatic insertion of a copyright notice is a great time saver. Here is how to make a suitable notice. It will be prepared to fit vertically at the right side of the image to avoid visual conflicts. You might want to create two—one in black type and one in white type.

Open a new canvas, File / New.
In the dialog box, set the Contents to Transparent.
Set the Mode to RGB.
Set the Size to 2 inches by 2 inches.
Set the Resolution to 300 (or to match the resolution you are using for your cards).

Choose the Horizontal Type Tool and type the copyright notice, e.g., © Your Name, right in the middle of the image (leave space at top and bottom). Use about 8 or 9 point type. You may have to go into your word processor to find a copyright symbol, or you can simply type the word “Copyright”. However, do not use “(c),” because it is not legally valid. Put the date in if you choose, but it’s not required.

Exit from the Horizontal Type Tool.
Select Edit / Transform / Rotate 90° CCW.
Select the Crop Tool and crop around the copyright notice pretty close.
Select File / Save As and save the notice with a name like “CopyrightBlack300V” (300ppi, “V” for vertical). Leave the original on the screen.

Choose the Horizontal Type Tool again.
In the options bar at the top will be a small black square—click in it.
The color picker will pop up.
Change the color to white (FFFFFF). The copyright notice will turn white and almost seem to disappear, but it’s still there, just nearly invisible against the transparent background.

Exit the Horizontal Type Tool.
Save the white copyright notice with a name like “Copyright-White300V.”

Close the copyright notice image.

Now, whatever color you decide to make your backgrounds, you’ll have a copyright notice in a contrasting color ready to insert.

Adding a Copyright Notice
Now that you have a copyright notice, it would be great if you could add it automatically to your stereo cards. We’ll do that. The parallel pair image you just made should still be onscreen in the work area. If not, load a composite image and create one to work on.
Click on the Create new action icon in the actions palette. Name the new action “AddCopyright-Black.” Press Record and then execute the following commands.
Cmd.1: Opening the copyright notice image:  
Select File / Open.  
In the files window that appears, locate your previously prepared “CopyrightBlack300V” image, and load it into the work area.

Cmd. 2: Click on Select / All.  
Cmd. 3: Select Edit / Copy to place the copyright notice into the clipboard.

Cmd. 4: Select File / Close to remove the original copyright notice from the work area.

Cmd. 5: Select Edit / Paste to add the copyright notice to your image. It will appear in the center and may be hard to spot.

Cmd. 6: Choose the Move Tool. Sometimes you have to left-click once in the image area to activate the arrow keys. Use the right arrow key to move the copyright notice to the right until it is centered in the white space along the right edge. (Shift-arrow goes faster.) Use the up/down arrow keys, as needed, for placement.

Stop the Recorder and Test the Action: In the manner previously described, stop the recorder, clear the work area and load a composite image. To test the new action, first play the Move Tool and use the arrow keys to move the copyright notice to the right edge. (Shift-arrow goes faster.) Use the up/down arrow keys, as needed, for placement.

Add a Filename to the 3-D Card

I like to add the image filename to the completed stereogram.

Select the Horizontal Type Tool and click at any convenient blank area.

Type the filename, file number, or your index number in 9 or 10 point type. Exit the Horizontal Type Tool.

Click on Edit / Transform / Rotate 90° CCW.

Select the Move Tool and use the arrow keys to move the new vertical file number into position at the right edge of the image right above the copyright notice, as if it were on the same line of type. If there is not enough room on the right, place it along the left edge.

Making an Anaglyph

Using your handy composite image, you can just as easily automate a procedure to instantly create anaglyphic images. The example is for polychromatic (color) anaglyphs.

Load a composite image into the Photoshop work area.

Make sure that Layer 1 is highlighted in the layers palette.

Create a new action as described earlier. Name the action “MakeAnaglyphColor.”

Click on Record in the dialog box.

Cmd. 1: In the layers palette, highlight the Background Layer.

Cmd. 2: Click on the Select tab and choose All.

Cmd. 3: Click on the Edit tab and choose Copy.

Cmd. 4: Click on the Stop playing/recording (square) button in the actions palette. This command will be inserted instead of recorded. This is done with the recorder off. The effect of doing it this way is to leave all the options blank. Consequently, the action will stop at the inserted command and ask for input.

In the upper right corner of the actions palette is a tiny triangle—click on it.

From the drop down menu, click on Insert Menu Item.

A dialog box will appear. In response, select File / New. Nothing visible will happen. Click on “OK” in the dialog box. By inserting command 4 in this manner you will have the option to provide a name for the new file each time you run this action. Plus, the new file will also automatically pick up the size of the composite image with which you are working.

In order for the progress of your image on-screen to match what we are about to record, again select File / New.

In the dialog box that appears, set the Contents to Background Color.

Set the Mode to RGB.

Click “OK” and a new window named “Untitled-1” will appear.

To resume recording, make sure the last command in the MakeAnaglyphColor action list (Make) is highlighted.

Turn the actions recorder back on by clicking on the Begin recording (round) button.

Execute the following steps:  
Cmd. 5: Select Edit / Paste.  
Cmd. 6: Select Layer / Flatten

Image. The background is now installed in the new image.

Cmd. 7: Click to open the channels palette and select the Red channel.

Cmd. 8: Click on the window containing the original composite file to make it the active window so we can acquire a copy of Layer 1.

Cmd. 9: Open the layers palette and click on Layer 1 to highlight it.

Cmd. 10: Click to open the channels palette and highlight the Red channel.

Cmd. 11: Select Edit / Copy. This command loads Layer 1 into the clipboard.

Cmd. 12: Select File / Close to get the composite original safely out of the way.

Cmd. 13: Select Edit / Paste to install Layer 1 into the new image. If this sequence confuses you—it did me—then here's what we did: we replaced the red channel of the right view image with the red channel from the left view image. All that remains of the right image are the blue and green channels (cyan) and the red channel contains the right image. Clear?

Cmd. 14: In the channels palette select the RGB channel. The anaglyph should now appear. This would be a good time to get out a pair of Red-left/Cyan-right glasses and verify that everything is ok.

Cmd. 15: (Optional) Here you could choose to automatically resize the image to a standard final size. Select Image / Size, change the Width, Height, and Resolution to values which suite your needs, and click “OK.”

Stop Recording and Test the Action: To end recording the action, click on the Stop playing/recording (square) button in the actions palette. Test as previously explained. The action will pause to let you rename the new file. Rename it or just click “OK”—you can always name it later if you decide to save it.

Making Cross-eyed Stereo Pairs

The “Make Stereo” action can be used to make cross-eyed stereo pairs, but the two layers in the composite image must first be swapped . . . left as Background
and right as Layer 1. Here is a small routine to quickly swap the layers back and forth and rename them so the MakeStereo action will function properly. This action is also handy if, for some reason (brain fade perhaps), you have created the composite with the layers in reversed order.

Load a composite image into the Photoshop work area.

Make sure that Layer 1 is highlighted in the layers palette.

Create a new action as described earlier. Name the action “Swap&RenameLayers.” Click on Record.

Cmd. 1: In the layers palette, select the Background layer to highlight it.

Cmd. 2: Select Layer /Duplicate Layer and press OK to accept the name “Background copy”.

Cmd. 3: In the layers palette, turn off the eyeball beside the Background copy.

Cmd. 4: In the layers palette, select Layer 1 so it is highlighted.

Cmd. 5: Select Layer / Merge visible.

Cmd. 6: In the layers palette, select the Background copy layer.

Cmd. 7: In the layers palette, double click on the label “Background copy.” Type over the name to rename the Background copy to “Layer 1” and press Enter (Return, on the Mac).

Stop Recording and Test the Action: To end recording the action, click on the Stop playing/recording (square) button in the actions palette. Discard the onscreen image, load a composite image and then play the Swap&RenameLayers action. After it runs, play the MakeStereo action to produce a cross-eyed stereo card.

Caution: Never save a composite file that has its layers swapped or you will lose track of which image is left or right.

The completed action can be applied to any composite image to reverse the layers back and forth, allowing you to use MakeStereo action to create either parallel or cross-eyed pairs at will, or just to correct brain fade errors.

Additional Functions

Any command can be removed from an action by simply dragging it into the trashcan icon in the actions palette.

Notice the check marks beside each command in an action. If the check mark is removed, that command will not execute when the set is played. For example, if there is a Reset Swatches command in a file (makes background white) and you want to put a green mat around the stereo pair, simply un-check that command in the action and your custom background color will be used instead of white. So that it will be easy to find and turn off/on, I now make the Reset Swatches command one of the first commands in a set. You can move it by simply dragging and dropping it into the order you want.

A new command can be inserted by highlighting the command it will follow, clicking on the Record action button, executing the command, and clicking the Stop playing/recording button.

You can group all of your actions in a folder of their own (called a set).

Actions can be saved to a file and moved to another computer. Any command in an action can be edited by double-clicking on it, but an image file must be open for that to work.

A “Stop” can be inserted at any point in an action. Highlight the command after which you want the stop to occur. Click on the tiny triangle in the actions palette to get extra options, and click on Insert stop. Stops can greatly increase the versatility of any action by allowing you to stop, perform a custom action, and then continuing by clicking the Play selection button. They are also great for testing and locating errors.

Any command or group of commands in an action can be copied into another action. To do this, highlight all the commands you wish to move, but not the title line. Highlighting is done by Ctrl-Clicking the first and the last command - they will all light up as being selected.

Alt-drag (Option-drag, for the Mac) the highlighted commands to where a heavier line appears under the name bar of your new action, or under the command line where you want them added, and release the mouse button. Now the commands are in both actions. If you forget to hold down “Alt” (“Option”, in the Mac) while you drag, the commands will be moved, not copied, from the source action.

The Batch Function

If all that isn't enough, the Batch function (File / Automate / Batch) can be used in conjunction with an action to perform that action on every file in a folder, automatically. It's simple to use and I recommend you check it out.

It is especially valuable if you have a large number of photographs which you want to convert to stereo cards or that all need the same adjustment (of almost any kind).

In Closing

These are just a few of the many possibilities provided by the actions feature. It won't take you long to find many more applications. You'll soon be using it and the batch function to automate any repetitive sequence of commands, from wholesale resizing of images to adjusting contrast.

I save computer space by no longer keeping copies of completed stereograms or anaglyphs because I can create one immediately from the composite image. Another space saving approach that I use is to separate the composite image into two images, named like the composite, but ending in “L” or “R”; for example, P1045&46L and P1045&46R. I then save them as slightly compressed JPEG files, cutting disk space usage drastically. When I need to use them, I just load both files onto the screen, drag the left one into the right to reassemble them into a composite (or I use a small action that will do it automatically). Then I run the MakeStereo action, as usual.
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After its first presentation at NSA 2005, the program will then make its way to Eastbourne in the UK in September for showing at the ISU 2005 Congress. Following that, the program will be available for bookings to stereo clubs in the United States and will travel on a circuit to these different organizations through 2005 and 2006.

How to Join the SSA

To join the SSA one must first, of course, be a member of the NSA. For placement in a stereocard, transparency or digital folio of their choice the new SSA member must send $10 to Treasurer Les Gehman, 3736 Rochdale Dr., Fort Collins, CO 80525, (970) 282-9899, lesgehman.org.

Acknowledgements

The author would like to express his gratitude to all who supported his research for this article, especially Dr. Klaus-Peter Anders, Uwe H. Breker, Ernst Hirsch, Dr. Willy Pfaff, M. Romboy, Hans-Jörg Schönherr and Walter Selle.

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ARCHIVAL SLEEVES: clear 2.5-mil Polypropylene

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BOOK, The Siege at Fort Arthur, hardback with 3-D viewer. $15 Eoz Air. (Cash preferred). Ron Blum, 2 Hussey Ave., Oaklands Park SA 5046, Australia.

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CLEARANCE: CIVIL WAR 3D. Nine original views plus fold-out viewer - originally $6.95, now $1.00 each plus $5.00 shipping any size order. View at fredbishopauctions.com/3d. Jim Van Eldik, 22 Horizon Hill, Newman, GA 30265, dutchhipper13@yahoo.com

COLOR PRINT PROCESSING for Realist format. Eighty cents per frame. Trimmed 3-1/4" square, right size for Q-Vu mounts. Contact Neil McGreavy at info@mcreavyprolab.com.

NEW REVISED EDITION of John Waldsmith's "Stereo Views, An Illustrated History and Price Guide" is available signed by the author, $24.95 softbound, add $2.95 postage and handling. (Foreign customers add an additional $1.25.) Please note there is no hardbound of this edition. Mastercard or Visa accepted. John Waldsmith, PO Box 83, Sharon Center, OH 44274. Website: www.YourAuctionPage.com/Waldsmith.


**FOR SALE**


STEREO PHOTOGRAPHY WORKSHOP Videos. Topics include Making Anaglyphs, 2D To 3D Conversion, Making Stereo Cards, etc. More coming. $25 Each Details: http://home.comcast.net/~workshops/ or send SASE for list to Dennis Green, 550 E. Webster, Ferndale, MI 48220.

STEREO VIEWS FOR SALE on our website at: www.daves-stereos.com email: wood@pikeonline.net or contact us by writing to Dave or Cyndi Wood, PO Box 838, Milford, MA 01337, Phone (508) 296-6176. Also wanted: views by L. Hensel of NY and PA.

STEREOVIEW PRICE GUIDE. Only $12.00!! Great for people buying from auctions and for collectors who want to know the latest realized auction values. Only numbered views over $50 are listed. Doc Boehme, 1236 Park SA 5046, Independence OH. Web info@mcareeworolab.com.

THE OHIO Stereo Photographic Society invites you to our meetings on the first Tuesday of each month at AAA Headquarters at 5700 Brecksville Road, Independence OH. Web: http://home.att.net/~osps/ or George Themellis (440) 838-4752 or Chuck Weiss (330) 633-4342.

VIEW-MASTER CHINESE ART SET. Mint condition, $650.00. Teco-Nimslo outfit, flash, IB. Exc plus cond. $325.00, also ed. Doc Boehme, 1236 Park SA 5046, Independence OH. Web info@mcareeworolab.com.

**WANTED**

BRASIL STEREOVIEWS. Chris Wampole, chrisw@belcliff.net 5053 SE Devonway Way, Stuart FL 34997.

COLLECT, TRADE, BUY & SELL: 19th Century images (cased, stereo, CDv, cabinet & large paper) Bill Lee, 9658 Galliata Way, Sandy, UT 84094, billbottle@sun.com Specialties: Western, Locomotives, Photographers, Indians, Mining, Jim Carrott, Expeditions, Ships, Utah and occupational.

CORT-E-SCOPE VIEWS or sets, any subject or condition. No viewers unless with views. John Waldsmith, 302 Granger Rd., Medina, OH 44256.

DARIUS KINSEY Sedro-Woolley Wash. Stereo Viewer. Bill Hotarek, PO Box 1508, Ellensburg WA 98926, catsndogs@setteltel.net.

EARLY VIEWS of Savannah, Georgia. W.R. Keitz, 23633 Town Creek Dr., Lexington Park, MD 20653, (301) 863-9467.

FLORIDA ANTHONY STEREOREVIEWS. $100+ paid for Florida Anthony stereoviews I don't have. Also, high prices paid for Florida stereoviews by Field, Wood & Bickle and small Florida towns. Hendriks, Box 21153, KSC FL 32815, (321) 452-0835.

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I BUY ARIZONA PHOTOGRAPHS! Stereoviews, cabinet cards, mounted photographs, RP post cards, albums and photographs taken before 1920. Also interested in Xeroxes of Arizona stereographs and photos for research. Will pay postage and copy costs. Jeremy Rowe, 2120 S. Las Palmas Cir., Mesa, AZ 85202.


KNOXVILLE, TENNESSEE views, particularly McCravy and Branson, for View-Master project. Originals or scans acceptable. Michael (868-782-9782 toll-free) or michael@viewproductions.com.

LOUIS HELLER of Yreka and Fort Jones, California. Anything! Also, any early California or western views wanted. Carl Mauz, cmauz@nccnet.net, (530) 478-1610.

MUYBRIDGE VIEWS - Top prices paid. Also Oregon and Mining - the 3Ms. Many views available for trade. Leonard Walle, 47530 Edinborough Lane, Novi, MI 48374.

NASHVILLE, TENNESSEE and Columbia, Tennessee stereoviews. Steve Carter, PO Box 110783, Nashville, TN 37222.

A one of the benefits of membership, NSA members are offered free use of classified advertising. Members may use 100 words per year, divided into three ads with a maximum of 35 words per ad. Additional words or additional ads may be inserted at the rate of 20¢ per word. Please include payments with ads. We cannot provide billings. Ads will be placed in the issue being assembled at the time of their arrival unless a specific later issue is requested.

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OLD WOODEN floor model stereoscope suitable to hold 3 1/2 x 7 inch cardboard stereoviews. Ann Platzer, 4205 Carney Court, Riverside CA 92507. edward.platzer@uic.edu

RED CLOUD AGENCY stereoviews from the 1870s for reproduction in book about the Sioux War. Purchase not necessary. Photographers include S.J. Morrow, James W. Hamilton, Charles Howard, David Redocker and Mitchell & McGowan. Contact Tom Powers, 106 Chelsea St, South Royalton, VT 05068. Tom@Steerforth.com

SINGLE VIEWS, or complete sets of "Longfellow's Youthful Days" done by D. C. Osborn, Artist, Assabet, Mass., Lawrence M. Rochette, 169 Woodland Drive, Marlborough, MA 01752.

VENICE CALIFORNIA Centennial Committee is planning a collection of National (not savings or other) banks, United States, all eras, interior and exterior. I would appreciate any offers and will respond to all. Dave Bowers, PO Box 539, Wolfeboro Falls, NH 03896. edward_platzer@uic.edu

WHITE MOUNTAINS: Early photographic views and stereoviews of New Hampshire White Mountain and northern NH regions, 1850s-1890s wanted for my collection. Town views, main streets, bridges, homes, occupational, coaches, railroads, etc. E-mail images to Sundman@littletoncoin.com, or send photocopies to David Sundman, President, Littleton Coin Company, 1309 Mt. Eustis Rd., Littleton, NH 03561-3735.

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Accidental Stereo

(Continued from page 5)

photos were taken with a folding Kodak Stereo camera, my surprise is that the photographer covered one of the lenses for part of the exposure, so as to yield two negatives of different densities, from which the best was chosen to make a print for publication. The negatives then went into the "negative box."

Then, after almost 70 years of dormancy, the two negatives were finally reunited and paired to yield a remarkable stereo "happencepair: my own mother as a teenager! :)

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← Left: Helene Leutner (German Actress)
→ Right: The Young Velocipedist

← Left: Edward Stokes, who shot Jim Fisk over a woman.
→ Right: View from the wood car, behind the locomotive in full motion.

← Left: Tissue Genre View.
→ Right: General U.S. Grant