SPECIAL THANKS

Our listing of annual donors is late this year, since the NSA staff has had an unusually busy year. Membership has continued to grow (now over 2,000) and the call for services such as back issues, books, information, etc. has increased proportionately, along with the routine processing of new memberships and the mailing of Stereo World. The production of the magazine has continued to grow into a bigger and more time consuming task than ever, with a number of large issues in addition to the complex color issue.

To know where your over $6,300 in donations went, you only need look at Stereo World, and especially the color issue which would not have been possible without your special support. Thanks to your generosity, in spite of increased costs, we are able to hold the line on dues (except for postage adjustments) for another year. So, belatedly, all the NSA volunteers thank the hundreds of people listed below for their assistance.

T.K. Treadwell

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Front Cover:
One of the biggest single hits of the 1988 NSA Convention in Cincinnati was this 3-D movie camera designed and built by amateur stereographer Archie Johnson in the mid 1930's in Toronto, Canada. For the story of Mr. Johnson and his camera, see "Archie Johnson, an Overlooked Canadian Experimenter" by Laro Boccioletti.
Editor's View

It's the Real Thing—Except...

Question: when is great 3-D not just poor stereo, but completely non stereoscopic? Answer: when it's the NUOPTIX 3-D TV system that Coca Cola ordered a bazillion glasses for last year so they could run a commercial and a few minutes of Moonlighting in 3-D. (See March/April '88, page 47.) The writers' strike set the plans back a season or so, but not before a very effective publicity effort had resulted in glowing accounts of the process by reviewers in several magazines and newspapers.

Having seen a Nuoptix demonstration tape a few weeks ago, I can safely say the good reviews were no exaggeration—some were even a bit understated. The 3-D effect on/in/through the screen is nearly as good as polarized liquid crystal shuttering systems costing $10,000 and more. It works effortlessly, instantly, and clearly, with no special equipment other than a pair of purple and pale green glasses. And there's nothing hazy about the images or subtle about the depth.

Scenes or objects as complex as you can imagine flow by with an apparent infinity of depth planes, all in the appropriate order—UNTIL something or someone chances to move in the wrong direction, against the programmed left-to-right motion of the image and everything in it, as required to create the depth effect. The result is a pseudoscopic intrusion as jarring as any bus 50 feet below the pavement in an aerial hyper or a head floating several feet in front of its body in a sequential stereo made with an SLR.

The reason this happens is that the Nuoptix system is also sequential, but only in the sense that the constant, relative movement of planes within the image is presented with a frame-to-frame Pulfrich effect time delay provided by the darker lens, with some help from the color tints of both lenses. The faster the movement, the more depth, since any time delay in perception of right vs. left will provide greater difference between the two images.

Exactly why or how the effect works in the brain is yet to be completely explained, but the Nuoptix system makes use of it in a way that can present the best 3-D images yet seen on an ordinary TV set. The problem, of course, is that all the elements of the image must be choreographed through every second of the shot to control the plane in which an object will be, relative to other objects and to the stereo window. The computer generated images in the demonstration tape were astoundingly good in this regard, as total control of every movement was possible.

Real life doesn't cooperate that well. A parade moving left-to-right across the screen looked fine until someone on a float dared to wave. Their hand would move faster than any of the rest of the float, causing problems even when movement was left-to-right. Then when the hand moved right-to-left, it was pseudoscopic disaster. Things moving directly to or from the camera (or simply up or down) cause problems too—which can only sometimes be solved by moving the camera steadily past the scene to create the proper relative movement differences between near and far objects.

Most of the more obvious instances of pseudoscopic object movements could have been edited out of the tape. I have no idea if they were left in to honestly reveal the limitations of the process, or simply because most people in any potential audience won't notice or identify problems floating through the novelty of such effective 3-D television. People watching poorly projected 3-D movies often put up with (or remain blissfully unaware of) pseudo and/or out of register images long enough to send most NSA members screaming for the exits.

For the same reasons, Nuoptix video ads or programs may get away with things sinking into walls or passing through parked cars in every other shot for some time. The matter of how long it could take the general public to become "3-D literate" is as little understood as the precise workings of the Pullfrich effect.

But if the Nuoptix idea ever "caught on" as the most cost effective 3-D TV system available, the problem facing serious stereography enthusiasts wouldn't be its inherent limitations to live action 3-D. It would be that for the first time in any mass communication medium, the distinction between "3-D" and "stereo" would be far more than a matter of picky semantics. Anything that gives an impression of depth or relief can be said to be "three dimensional," from a painting with good perspective control, to sculpture to embossed wallpaper. "Stereoscopic," in general use, refers to the attempt, by whatever means, to reproduce a "solid looking" image of the original scene as observed from two different

(Continued on Inside Back Cover)
Letters

Series V Filters

In the Nov./Dec. Stereo World, Gary S. Mangiacopra laments the fact that Hoya has stopped importing Series V filters, which are used by the Kodak, ViewMaster and other stereo cameras. Thanks to a tip from David Starkman, I recently made a call to the Tiffen Manufacturing Company and have learned that they still manufacture certain of their filters in Series V and, more importantly, that they will sell directly to consumers through the mail. I had long believed that one had to find a dealer to special order "odd-sized filters in order to get them from Tiffen, but this turns out not to be the case.

For a list of filters available and their prices, write to Tiffen Mfg., 90 Oser Ave., Hauppauge NY 11788. Attn: Customer Service. You may also phone them toll-free at (800)645-2522; ask for the Customer Service department. To order, all that is required is a list of the filters you want, your name and address and a check for the amount of the filters plus UPS shipping costs.

Vance Bass, Knoxville, TN

Non-Photographic Pairs Sought

I am attempting to compile a monograph on non-photographic stereo pairs and anaglyphs, including pre- and para-photographic examples. My first need is printed stereo cards originated by drawing or lettering and available in the form of good reproduction copies. At this stage, about 200 such items are at hand. However, the group includes only one or two from D.C. Heath's mathematical set, from the Underwood geometrical set, and from the Brewster set published in Paris pre-1856. More are desirable in these categories. I am also interested in computer generated stereo pairs and anaglyphs.

I should be grateful if readers could make this kind of material available to me (back and front of cards) and any other information (including present location of originals) they might have. Photocopies of catalogs and lists of stereo cards of the above type would also be greatly appreciated. In exchange, I will send photocopies of items in my growing collection. All assistance will, of course, be gratefully acknowledged in any publication that may result.

Peter Mayer
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Hither Green
London, SE13 6TA
ENGLAND

Glen Onoko Lives

Many thanks to all the people who recently answered my query for information about Glen Onoko: Paula Fleming, Paul Boyer, Bill Brey, Durrae Johaneke, Fred Hooper, and William Darrah.

Glen Onoko does still exist, in Pennsylvania, near what is now the town of Jim Thorpe. About 2½ miles northwest of town, the largest of the Glen's falls is often visible from Route 209 during the winter (especially if it is frozen over). Access to the glen trail is by walking across a railroad bridge over the Lehigh River. Those who have been there describe it as a beautiful walk between rhododendron bushes, to the three large waterfalls formed on ledges of the Mississippian-age Pocono formation.

Jim Thorpe was once called Mauch Chunk, then known as the "Switzerland of America." Glen Onoko was the next stop on the railroad after Mauch Chunk, and in the late 1800's there was a large hotel at the stop, named after the glen. The American Cyclopedia, published in 1875, had this to say about the area: "The beauty of the scenery, the coolness and purity of the air, and the excellence of the water have rendered it [Mauch Chunk] a famous summer resort. Glen Onoko, near the borough, a wild and beautiful ravine, is a prominent attraction."

Neal Bullington, Patchogue, NY

Slide Viewing/Mounting Kit

A few months ago I came across an item in a catalog which . . . it occurred to me . . . would be helpful for mounting stereo slides, and more besides. The Lillian Vernon Catalog where it appears calls it an "Improved Illuminated View-and-Store Film Box." I call it an "Illuminated Stereo View-and-Equipment Storage Box." It's item #4294 in the 1988 catalog, and costs $22.00 plus $4.85 shipping from Lillian Vernon, 510 S. Fulton Ave., Mount Vernon, NY 10550.

Here is how this viewer can be easily adapted for stereo purposes. First, remove the slide holding tray and, voilà! you have a perfect container for: 1. the great little Hama slide cutter, including adapting transformer for 110 v., 2. at least one hundred heat-seal stereo mounts, 3. a stereo lorgnette viewer like the Realist type, 4. cloth gloves for handling film chips, and 5. a stereo viewing mask. Items 1, 2, and 3 are available from Reel 3-D Enterprises. The lid of the battery compartment, located above the fluorescent light, is a long narrow tray, perfect for holding tweezers. (I lined mine with self-sticking felt.)

(Continued on Inside Back Cover)
The Great Fair at Nizhni Novgorod

by Anthony Winston
Nizhni (Nijni) Novgorod, situated 250 miles east of Moscow at the confluence of the Oka and the Volga, was the site of a commercial fair, held each summer from July 15 to September 10. The fair was originally held in the city of Makaryev, about 50 miles downstream on the Volga, but was moved in 1817 after a fire had destroyed the former site. Because of this fire, a ban on smoking was strictly enforced. The fair continued up until about the time of the Russian revolution, was revived briefly in the 1920s, and was finally abolished in 1930. In 1932 Nizhni Novgorod was renamed Corky after the famous Russian writer Maxim Gorky.

According to a 1905 Keystone view, attendance was 200,000 to 300,000 people, with merchants coming from almost every country in Europe. Hundreds of buildings had been constructed, mostly of stone and roofed with iron at an estimated cost of $8,000,000. Annual sales approached $100,000,000, a considerable sum in those days.

The Underwood and Underwood 100 view set "Russia through the Stereoscope" with its accompanying guide book by M. S. Emory (1901) provides us with a glimpse of this Russian fair that held such a prominent position in the movement of goods during the past century. The great floating bridge across the Oka, view 76, was the main access to the fair from Nijni Novgorod. The Volga River, about a half mile downstream to the right, as well as the Oka, were decisive factors in the success of the fair. As Emory points out, the freighting was done at wholesale and "the merchants do not simply show samples of their goods; they have their stock here and deliver at once to purchasing shop-keepers from all parts of the country."

Besides Emory, two other authors have written fascinating accounts of the Fair. One account is by Théophile Gautier, who traveled extensively in Russia and wrote a two volume work on his travels (1905). The other (1895) is by Isabel F. Hapgood who traveled for two years in Russia with two women companions and spent five days at the Fair.

On crossing the great floating bridge, Gautier has this to say. "A little further on, amid an indescribable confusion of carriages and people, packed together as in the Champs-Elysées on an evening when fireworks are displayed, we finally succeeded in reaching the fair grounds. To enter it was a matter of danger and difficulty. Fortunately true travelers are like great captains - they pass everywhere, not with a flag, but with a lorgnette in their hands."

"At the head of the bridge rose tall poles covered with streamers of every color that extravagant fancy could dictate, like those Venetian standards used in our fetes. On one a pencil, full of good intentions, had striven to represent the Emperor and Empress; others were adorned with the double headed eagle, with St. George brandishing his lance, with Chinese dragons, leopards, unicorns, griffons, - the entire chimeraical menagerie of animals."

"The bridge built over the Oka was a bridge of boats, strengthened with joists and furnished with a wooden pavement. A crowd completely covered it, and in the middle carriages dashed along with that rapidity that nothing moderates in Russia, but which does not cause accidents, thanks to the skill of the drivers, seconded by the willingness of the foot-passengers to get out of the way. The noise resembled the noise made by the chariot of Salmoneus on the bridge of brass. The two banks of the river disappeared under the immense number of boats and an inextricable mass of rigging. Perched on their high saddles, the Cossacks, acting as police for the fair, walked their little horses about sedately, and were seen from afar, with their great lances, amid the droskies, télégas, and vehicles of..."
every description and pedestrians of both sexes. But there was no other noise. Anywhere else there would have risen from such an assemblage a tremendous noise, an uproar like that of the sea. A very atmosphere of sound would have floated over the prodigious concourse of individuals: but crowds made up of Russian elements are silent."

View 77 is an overall view of the fairgrounds, and, according to the guide map, includes a section delegated to felt footwear. Emory - "A National Exposition this truly is, and yet there is evidently no attempt at architectural effect in its housing or arrangement. There are rows on rows of two-story shops like these with awnings over the narrow sidewalks, and within, every sort of thing that anybody ever buys . . . like the stock of a "general store" in an American country village magnified to an enormous scale."

View 78 shows the street Nizhegoroaskaya which leads to the floating bridge across the Oka. This view and the two views of the cloth market attest to the crowds mentioned by Gautier and provide a glimpse of some of the wares. Hapgood - "There are shops full of rolls of sarpinka, a fine, changeable gingham in pink and blue, green and yellow, and a score of other combina-
Some other shop.

Hapgood - "But sometimes, as we wandered . . . among the rows, we found the ground . . . strewn with fresh sprays of fragrant fir . . . it appeared that a holy picture had been carried along the rows, and into the shops of those who desired its blessing on their trade, and a short service had been held. The "zeal" of these numerous devout persons must have enriched the church where the ikóna dwelt, judging from the number of times during our five days' stay that we came upon these freshly strewn paths."

View 80 is of Chinese Row. Gau-tier - "but what we looked for with especial eagerness, particularly

when we reached the quarter where tea was sold, was the Chinese. We fancied our desire was on the point of being realized when we spied the shops with curved roofs and trellises carved in Greek fashion, with smiling figures, which made one feel as if transported by the magic ring to a city of the Celestial Empire. But at the thresholds of the shops, and behind the counters, we saw only honest Russian countenances. Not a sign of a plaited queue, nor head with oblique eyes and pointed brows; not a sign of a hat shaped like a dish, nor a blue or violet silk robe - not a Chinaman was anywhere to be seen. Without reflecting upon the enormous distance from Nijni-Novgorod to the Chinese frontier, we had believed foolishly that the merchants of the Middle Kingdom would themselves bring their tea to the fair. For three years none had come, and only one was here this year, who to protect himself from importunate curiosity had adopted the European costume."

No. 79, "Russian Cloth Market in the Fair of Nijni-Novgorod, Russia." Underwood & Underwood, "Russia Through the Stereoscope" set.

No. 80, "Chinese Row in the Market of all Nations, Nijni-Novgorod, Russia." Underwood & Underwood, "Russia Through the Stereoscope" set.
ga holds the shafts apart so that they do not rub the sides of the horse.

Gautier ends his account of the Fair with the following: “What should we do with the rest of the evening? A drosky passed by; we hailed it, and, without knowing where we wished to go, it started off in full gallop in the usual fashion of the isvochtchiks, who rarely ask where the traveler desires to be tak-

clean and not very attractive in their personal appearance. Many of them live through the time of the Fair in these huts, scattered about among the piles of skins, taking care of the stock, for it is immensely valuable in spite of its smell.”

Keystone view 6644 is of the Bell Market. On the reverse side it states: “One of the great markets in the fair is the market of bells. Bells are everywhere in Russia. Every city has many places of worship, for the Russians are a religious people. All the places connected with the church have bells. Hundreds of these bells are bought each year at the Nizhni fair in the bell market you see here.”

The characteristic harness of the horse drawn vehicles seen in several of the views consists of a trace which extends from the collar, or douga, to the axle. The arched doug-
No. 484 (Keystone #6644) “The Bell Market, Nizhni Novgorod, Russia.”

en. A “na leva” or “na prava” corrects their direction, if necessary. This one, crossing the bridge leading to Nikita’s, tore through the open country, whose only roads were indicated by muddy wheel ruts. We let him alone, thinking he would end by taking us somewhere. In fact, this intelligent coachman had decided to his own satisfaction that gentlemen of our sort, at this hour of the evening, could only wish to be taken to the quarter reserved for tea, music, and amusement.

“It was beginning to grow dark. We crossed, at a frightful rate of speed, a rough country full of pools of water, in a half-light that allowed but the outline of objects to be seen. Finally lights began to flash through the darkness and the sound of brass instruments reached our ears, betraying the presence of orchestras. We had arrived. From houses with wide-open doors and lighted windows issued the humming of balaleikas, intermingled with guttural cries. Strange scenes could be seen through the windows. Drunken figures staggered on the sidewalk, succeeded by showily dressed women.

“Mud was everywhere. At the corners the water, lacking outlet, formed deep puddles, in which the carriage wheels, immersed to the hub, stirred up foul miasmas.

“Little desirous of being over-

Bibliography

M. S. Emory, Russia Through the Stereoscope, Underwood and Underwood, New York, 1901.
Primary Stereo

by Laurance Wolfe

If you meet every entrant in the New Hampshire Presidential Preference Primary, tradition says you've met the next President of the United States.

"We are the only state with a primary since 1952 that has given its majority of votes to the ultimate winner of the presidency," says William Gardner, Secretary of State for the Granite State.

True, every president from Eisenhower to Reagan, won first in New Hampshire.

The Primary is not a cut-and-dried political exercise -- each one differs. A revised cast of characters is on stage every four years. New issues take over. Fresh scenarios are written.

NSA stereographers share in changes that in some cases ease the task of stereography and, in others, present special stereo-taking opportunities. The objective remains the same: to corner and zero in on every major applicant for the White House top job and to produce a quality stereo view of that "next President of the United States."

A major difference between 1987-88 and earlier primaries: the nation's eyes were not concentrated on New Hampshire this time to the extent they had been four years earlier. Iowa, with caucuses occurring days before the New Hampshire balloting, crept up in importance.

Four years ago, nearly three weeks separated the selection process of the two states.

A further difference: Iowans consider the caucuses as a state-wide referendum on matters important to every citizen. This time, the New Hampshire Primary appeared to be developing into a huge media event.

Commentators pointed out that Iowa farmers, in the midst of economic set-back, were more concerned with programs than with personalities. New Hampshire, with a presently thriving economy and the lowest unemployment in the nation, prizes the media attention generated by candidates and their retinues of celebrities like Baseball Great Ted Williams, Actor Richard Gere, Singer Johnny Cash, and other glamorous folk. (A bush league critic remarked, "The I in Iowa is for issues. The N in New Hampshire stands for newspapers and networks.")

Few shifts occurred in the approach to getting stereo views in 1988 versus 1984. (See Stereo World, July/Aug. '84, page 10.)

The challenges don't change. The stereographer must still contend with the constantly changing schedules of candidates -- schedules which are obtained by being placed on the press list of the candidates' headquarters. Patience and persistence are qualities essential to the work.

There are still crowds -- ever-mounting as the campaigns move forward -- which surround the candidate and screen him from the camera. These must be penetrated.

New to this primary was a Stereo Kodak to replace the Realist as #1 camera. (Difficulty in advancing film in the Realist in zero weather mandated the switch.) The Realist becomes the back-up, with Ektachrome 100 processed and mounted by a local dealer as the 1988 standard shooting procedure.

The stereo candidate view file was enriched in 1988 by contributions from NSA members Craig Daniels and Robert A J Thorpe. Daniels caught a view of Patricia Schroeder, Congressperson from Colorado, in a Minnesota location. This was just before she withdrew from consideration -- before electioneering really began. New Hampshire was not the site for Thorpe's shooting either. But he was right in the center of the Iowa caucuses and produced some striking shots with a Nimslo.

To build the stereo view resource for this article, SW's New Hampshire "staff photographer" unleashed his lenses for the first time in the 1988 contest in May of 1987. The occasion was one of a series of foreign policy addresses to be delivered at Dartmouth College. The scheduled speaker (the same person who would be the recipient of major headlines, many of them unfavorable) had, only a few short weeks before, announced his candidacy. Gary Hart was blown from the water on the Sunday before his Dartmouth appearance. Candidate Hart, the Washington Post reported, had been engaged in hanky-panky unworthy of a presidential candidate.

A strained press conference followed the foreign policy talk. Hart was asked, among other things, if he believed adultery to be immoral (he answered "yes"). One hour of this and Hart was ready to return to Denver and fold his tent. Dartmouth, it was noted in the press, was the last formal appearance of the aborted campaign. Stereo views of his Dartmouth day show Hart preparing to deliver his speech, delivering his speech, answering questions.

A Republican picnic in August was aimed at giving party members a chance to look over the candidates and contribute a mite to the party coffers. It also marked the debut of many of the buttons, posters, and campaign paraphernalia that would earn wider exposure in the months ahead. An extra-large paper streamer, "Pat Robertson for President" was strung along the side of one of the outbuildings on the carefully-manicured rolling lawns of the Republican picnic host's property. Pat wasn't there. "Dole" bumper strips laced the side of a huge dining tent. Bob Dole wasn't there. "Bush" placards were all over the acreage. George Bush wasn't there. A "du Pont" reminder could be found if you looked hard. "Pete" du Pont couldn't be found. Present, along with a few signs of their own, were Alexander Haig, Jack Kemp, and a lady you may have heard of here first -- and maybe last, too -- Kate Heslop, from Hattiesburg, Mississippi, who never would get around to filing for the New Hampshire Primary.

The stereo shutter was busy and competition for images was near non-existent. A TV crew from WBZ-TV, Boston, made the scene with a star commentator. The station's chopper stayed on the spot for about an hour, then whisked away with its 15-seconds for the evening news. Of the two candidates, General Alexander Haig shed his military bearing and enjoyed the handshaking and being caught in 3-D. One shot captured Haig in a huddle with a few admirers, one of whom was a lady who looked upon the candidate with the rapture only a saint might earn. Jack Kemp obliged the stereo-taker by tossing a football, autographing a stuffed toy elephant, and performing other campaign
niceties within range of the stereo camera.

Several weeks later, the day's outstanding stereo surfaced. The view shows Jack Kemp tete-a-tete with New Hampshire State Senator John "Happy Jack" Chandler. Chandler, a controversial politico, was a member of the Kemp-for-President Committee, and notorious in the Granite State for certain prejudices. Not long after the picnic, word spread that Chandler was retailing a racial joke involving another candidate. He was peremptorily sacked by Kemp. The stereo became a collector's item!

George Bush, as a sitting Vice President (the like of which has not moved into the Oval Office since Martin Van Buren in 1836), has enough security forces around him—mostly Secret Service—to command an instant crowd wherever he goes. Pied Piper dynamics build that crowd rapidly.

One visit, in August, was to a charity affair. New London (NH, that is) Hospital Day includes many events on the grassy lawns of Colby-Sawyer College, outstanding of which are those centered around carnival-type activities. Bush moved about the various booths and decided on the one where baseball throwing was involved. This made for a good photo if the photographer was able to break through the wall of humanity surrounding the vice president. A close-up of the former captain of the Yale nine, baseball in hand, was spoiled by a waving arm of a would-be protector. However, a good view of Bush, sans baseball, was managed a moment after the throw.

Thirty-nine persons who were confident they could assume the Presidency of the Republic and make a better country for all of us had entered the lists in New Hampshire by the last day for filing—December 18, 1987. Included were Claude Kirk, Jr., former governor of Florida (who said he was a stalking horse for both Mario Cuomo and Lee Iacocca) and the 12-time seeker after this nation's highest prize, Harold Stassen.

Three other persons had withdrawn from the competition earlier. Besides Schroeder, these were Paul Laxalt and Joseph Biden, both of whom withdrew before New Hamp-
Gary Hart even sought out non-voters on his re-entry day, December 15, 1987.

Jesse Jackson answers questions following the ecology debate in November, 1987.


Also included in the final count of candidates—Gary Hart.

Hart’s reentry, with a bare-bones staff, provided the impact of an interplanetary spaceship with the crew of a Piper Cub. Spreading the word scarcely 12 hours before, Hart descended on the State capital followed by instantly mobilized media, early on December 15.

Photo opportunities and stereo opportunities proliferated beyond the dreams of most amateur or professional of shutterbugs. Hart appeared to be back in the race with a vengeance—and the media seemed to be with him.

He made good copy but, within days, media affection began to waver. As Hart’s place in the polls plunged, his media exposure plummeted. For a spate, though, Hart headlines exceeded those of the rest of the considerable group competing for the big prize.

Views of Democratic candidates were available through a schedule offering several events in which all Democratic brethren were to appear. Two of these were noteworthy: an ecology debate and the party’s State Convention. “Photo ops” highlighted each event. Post-debate, circulating candidates were ready for exposure to cameras in the debate area and in the hospitality suites their committees had set up. A creditable stereo portrait of Jesse Jackson, and a few Grade C slides of Albert Gore, Jr., and other candidates, was the image haul for the day.

The New Hampshire State Democratic Convention was a whole other story. In an arena filled with balloons and campaign signs of all dimensions, colors, and messages, and with table after table of highly partisan party members waving their candidate standards wildly, a spectacular backdrop for stereo views was offered. Dukakis, Simon, Jackson, Gephardt, Babbitt, Gore . . . never had it so good!

Rules for the press were quite permissive. Photographers (and your stereographer) were allowed in front, in back, on the sides of, and even right on, the stage from which the candidates espoused their causes and pleaded their cases. No penalties were imposed for crawling,
creeping, craning, or otherwise positioning oneself for a better shot.

Only when a photographer put himself in line with a speaking candidate and the TV cameras did State Democratic Chairman Joseph Grandmaison blow the whistle.

Michael Dukakis—Governor of New Hampshire’s neighboring Massachusetts—and Senator Paul Simon had the most vociferous claqués at the event. Dukakis’s popularity was attributed to his opposition to New Hampshire’s Seabrook nuclear plant. He had declined to approve evacuation plans affecting cities in his own State, thus keeping Seabrook on hold.

Republicans had few “groupie” events, where clusters of their candidates might be stereographed at one sitting. One-at-a-time was the general rule.

Pat Robertson’s forays into New Hampshire’s voter enclaves were usually for pre-packaged groups. You had to settle on State House “cliche” shots to acquire uncluttered views of him. This was a good settle, it turned out. Robertson is stereogenic and outgoing. And although a number of Secret Service persons accompanied him there were few if any adherents to get in the way of the lenses. Robertson took a block-long walk after the signing, the stereographer and a few photographers trailing. Good shots resulted inside and outside the capitol.

Both Republican Pierre “Pete” du Pont, former Governor of Delaware, and Democrat Bruce Babbitt, who held the same post in Arizona, were best reflected in stereo with views taken of them on the day they filed with the Secretary of State.

New Hampshire’s North Country fringes offered an event that nearly all the candidates sought to capitalize on—one by one. The World’s Championship Sled Dog Races—an annual fixture in Laconia for more than half a century—occurred prior to Primary Day. Candidate after candidate made the trek to Laconia to be seen with the sled dogs—beautiful creatures whose individual worth would make a dent in the national budget. Al Gore and Jack Kemp were stereographed in the area of the starting line. The

(Continued on page 37)
The 1988 NSA Convention attracted nearly 500 people to the Cincinnati Convention Center and related activities in the nearby Omni-Netherland Hotel. By Thursday afternoon (Aug. 18) the "room hopping" tradition was well under way, with eager collectors going through boxes and stacks of views covering the beds and night tables of each other's rooms. Packed elevators carried hoppers the vertical equivalent of several miles into the stratosphere as they tracked down their stereo quarries based on a list of dealers' rooms at the NSA registration table in the Omni-Netherland lobby.

The Programs

The huge new Cincinnati Convention Center is only about a block and a half from the hotel, and it was possible to walk there without ever touching a sidewalk or street. A maze of second floor skywalks link most of the downtown buildings in that area, making the stroll a test of just how well one could resist the food and merchandise temptations on every side, as the route passed through and between buildings. All 3-D slide programs were presented in the convention center on Friday the 19th, following the opening ceremonies at 8:30 a.m.

First on the program was "Cincinnati Through the Stereoscope" by John Waldsmith, a stereo illustrated history of several buildings and landmarks of the city—currently celebrating its 200th birthday. Most of the landmarks still in existence were within easy walking distance, such as the Tyler Davidson Fountain and the Cincinnati & Covington suspension bridge built by Roebling in 1867. (See Stereo World, May/June '88, page 27.)

Guy Ventouillac, professional stereography producer of Paris, France presented a varied program that included a stereo tour of the locations involved with the story of "Joan of Arc", with several detailed interior and exterior building views. "From Orleans to New Orleans" was a more wide ranging scenic study of French towns and cities and architecture. These projections were from full frame 2x2" slides taken with the French made Hectron stereo camera. (See Stereo World, May/June '88, page 16.) Also on his program was the often requested close-up 3-D slide show detailing the inner workings of an elegant punched-disc type music box, complete with a lyrical narration and dramatic multi-colored back and front lighting.

Bob Brackett presented a demonstration of his Brackett Dissolver four lensed stereo slide projector. While it has been seen and used in programs at other NSA and ISU gatherings, its full potential isn't always revealed in an ordinary showing of a series of Realist format or 7 sprocket slides. This time, we were treated to a show in which lighting or other elements of a stereograph changed dramatically, while other images suddenly became animated. With rapid movement of the dissolve lever, people and objects in carefully arranged shots were made to move with a steady smoothness that rivaled the most elaborate multiple-projector synchronizations.

The 1948 stereo images of cities and highways seen in "Highway USA" were seen again this year in an encore performance of the show's (and the projector's) hit appearance at the 1987 convention in King of Prussia, PA. Part of the Holmes Library collection, the unique projector and 105 huge slides (shot side-by-side on 5x7" Kodachrome) are probably the last in existence of the three touring outfits created for the Barber-Greene Company as a scenic tribute to U.S. highways and their builders. (See Stereo World, Jan./Feb. '85, page 24.) This appearance was probably the last outside the Holmes Library for some time, as the heavy case containing the projector was damaged slightly at some point in shipment or storage between the library and the convention room. The hole in the case was only inches from one of the lenses, and a set of 35mm duplicates exists that could be transported more safely for future shows outside the Holmes Library.

Perhaps the biggest hit of this year's programs was a one-of-a-kind stereoscopic movie camera designed and built in the mid 1930's by Archie Johnson, an amateur.
The Trade Show room in the Cincinnati Convention Center from behind Larry Gottheim's table. A total of 93 tables were covered with the wares of 60 dealers.

stereographer in Toronto. Following an explanation of its operation, a sample of footage from the camera was projected using the anaglyphic loop devised by Mr. Johnson, and anaglyphic glasses donated to the audience by Reel 3-D Enterprises. (These, as far as I know, are the only "scratch & sniff" 3-D glasses ever made, being left-overs from TV airings of the anaglyphic video version of the 1954 3-D film "Gorilla at Large.") More details about the camera and its rediscovery can be found in the article by its current owner, Lauro Boccioletti, in this issue.

The next show was one of the very few 3-D slide presentations also available in View-Master illustrated book form. Stan White's "Beyond the Third Dimension" is a rapid-fire series of 50 delightfully funny table-top images of toys, toastesrs, vegetables, etc. The things being done to and by these unlikely props and toy figures defy easy description in words. They are all funny, and sometimes mildly outrageous, without ever being cute or corny in image or narration. Some of the best involve only sound effects on the tape—as when the sound of gunfire in a battle is heard about two seconds before a slide appears on the screen revealing red coated British troops defending a wedge of cheese the relative size of a three story building from a toy mouse nearly as large. The book, with 21 of the images from the show, is reviewed on page 36 of the Nov./Dec. '87 issue, and one of the stereographs appears on page 36 of the Mar./Apr. '88 color issue. "Beyond the Third Dimension" is truly . . . where dreams become reality.

While many members may have seen an earlier incarnation at the 1986 convention in Riverside, CA, "Stereography: A Fresher Portrayal" by Susan Pinsky is a constantly updated collection of the work of members of the Stereo Club of Southern California. The program is divided into mini sequences designed to entice, delight, teach and inspire both beginner and experienced stereographer.

Bryan Ginns at his table stocked with viewers of various ages and styles.
As were the two programs above, "A Window on Stereo World" by Lou Smaus was well received at the ISU Congress last year in Switzerland. Slide originals or copies of images from several recent SW feature articles are included along with a stereo record of the editorial, layout, and mailing functions. (Will a Special on PBS be next?)

'88 Stereo Display Biggest Yet

Mike Griffith of Lilburn, Georgia carried away the "Best of Show" honors with his exhibit of the "Atlanta Road Race of 1909." Seventy competitive and non-competitive exhibits were featured, the largest display ever at an NSA Convention. The judges were hard pressed to make their selections which resulted in ties in two categories. The judges were Greg Drake from the George Eastman House in Rochester, NY; Gordon D. Hoffman of Fond Du Lac, WI; Norman B. "Bill" Patterson of Wesleyville, PA and Dr. Brandt Rowles of Norwich, NY.

This year for the first time the vintage and modern stereo views were exhibited behind glass in special frames recently purchased by the NSA. Those in attendance agreed this was a major upgrade to the appearance of the exhibits.

In addition to the judges' "Best of Show" award, the NSA Chairman of the Board, Lou Smaus standing in for President T.K. Treadwell gave his selections for the Annual President's Award. This was won by Anthony Winston of Morgantown, West Virginia for his exhibit "Lititz, Pa.—Then & Now." Receiving

honorable mention were David R. Johnson's "Street Art of New York City," Quentin Burke's "Great America Car Race," and T.K. Treadwell's "Worst of Stereo." This year's Invited Exhibit was "Cincinnati in Stereo" by John Waldsmith of Sycamore, OH.

Awards

The 1988 NSA Awards Banquet was held in the impressive "Hall of Mirrors" in the Omni-Netherland Hotel Saturday evening. Following the presentation of awards for the above categories in the competitive exhibits, NSA Chairman of the Board Lou Smaus presented this year's NSA recognition and service awards. One hundred members and guests attended the banquet.

Chosen 1988 FELLOW OF THE NSA for distinguished scholarship and extraordinary knowledge of the field was Wm. "Russ" Young, who was also this year's guest speaker following the awards.

The EDWARD B. BERKOWITZ AWARD for the best article in a recent issue of Stereo World went to Richard C. Ryder for his feature, "The Great Liners of the North Atlantic" in the Nov./Dec. '87 issue.

The awards Committee decided that, beginning this year, a separate award would go to the author of the best article dealing with a current stereo subject, while the Berkowitz Award would be oriented toward articles covering vintage, historical subjects. Still lacking a name, the award will for now be called the MEMORIAL AWARD, and the first recipient was Norman B. Patterson, for his article in the March/April '87 issue, "Through the Electron Window."
Exhibits and Exhibitors

City, State or Region in the United States

"Street Art of N.Y.C.,” David R. Johnson, Huntington, NY.
"San Francisco,” Craig F. Daniels, Red Wing, MN.
"Lititz, Pa.—Then & Now,” Anthony Winston, Morgantown, WV.
"West Coast Beauty,” Nancy L. Sobottka, Red Wing, MN.
"3-Details: West Coast Views,” Dennis Johnson, Venice, CA.
"Early California Resorts & Spas,” Marvin Housworth, Atlanta, GA.
"Springtime in Richmond, Virginia (Bryan Park),” Judy Proffitt, Richmond, VA.
**Construction on the Western NC. Railroad;” C. Wesley Cowan, Cincinnati, OH.

Famous Personalities

**"Modern Personalities,” Bill C. Walton, Columbus, GA.
**Personalities,” Mike Chikiris, Pittsburgh, PA.
**Ritual Players,” Laurence Wolfe, North Sutton, NH.

Transportation

"The Country Ferry,” Russell Norton, New Haven, CT.
"Housworth’s Western Railroad Views,” Marvin Housworth, Atlanta, GA.
"Great America Car Race,” Q. Burke, Holtvile, CA.
"The Ports and Canals of Holland,” C. Wesley Cowan, Cincinnati, OH.

Ethnic, Racial or Religious Groups

"Moravian Settlement at Bethlehem, PA.,” Lois Winston, Morgantown, WV.
"Home Sweet Home—Indian Dwellings in the American West,” Jim Crain, San Francisco, CA.

Occupational

**Old-Time Baseball,“ Mark Rucker, Saratoga Springs, NY.
"Western Mining & Mining Towns,” Marvin Housworth, Atlanta, GA.

Expositions and Fairs

**Cotton States Intl’l Exposition—1895, Atlanta,” Marvin Housworth, Atlanta, GA.
"Finale,” Q. Burke, Holtvile, CA.

Views by a Particular Photographer or Publisher (Vintage)

"Rufus Morgan: America's Forgotten Photographer,” Russell Norton, New Haven, CT.
"Majestic Peaks,” Nancy Sobottka, Red Wing, MN.
"But Here We Have Sunshine,” Marvin Housworth, Atlanta, GA.
"Carleton E. Watkins and the Pacific Coast in the 1860’s,” William L. Schaeffer, Chester, CT.
"Eadward J. Muybridge,” William L. Schaeffer, Chester, CT.
**L. & H. ’65,” Bill Lee, Sandy, UT.

Military and War Views

**"U.S. Army in Action,” Bill C. Walton, Columbus, GA.
**Infantry Basic Training,” Bill C. Walton, Columbus, GA.
"U.S. Army in Action,” Bill C. Walton, Columbus, GA.

Foreign Views

"Construction of the Victoria Bridge by Notman—1859,” Robert C. Wilson, Toronto, Ontario, Canada.
"Northern Germany,” Bill C. Walton, Columbus, GA.
"Russian Orthodox Churches,” Robin Burke, New Haven, CT.
**I often have difficulty in deciding . . .”, Marvin Housworth, Atlanta, GA.

Surveys and Expeditions

**"J.C.’s Travels,” Bill Lee, Sandy, UT.

Photographic Subjects

**Photographers of the 19th Century,” George Polakoff, Hubbard Woods, IL.

Historic Events

"Atlantic Road Race of 1909,” Michael W. Griffith, Lilburn, GA.
"Titanic—The Aftermath,” Q. Burke, Holtvile, CA.

Open Category

"USA 3-D.“ T.P. McIntyre, New York, NY.
"Potpourri,” Bill C. Walton, Columbus, GA.
"Flowers in My Garden,” Richard Orr, Omaha, NE.
"Stereography Is Fun!” (Modern Views), Nancy Sobottka, Red Wing, MN.
**Untitled,” Doug Doughty, Saginaw, MI.

"Just what is it you collect anyway,” William L. Schaeffer, Chester, CT.
"Stumped,” Ray Boudreau, Rochester, N.Y.
"Geothermal Industry,” Q. Burke, Holtville, CA.
"Worst of Stereo’” T.K. Treadwell, Bryan, TX.
"Let’s Play Ball,” Chuck Lesser, Scottsdale, AZ.
"Wild Blue Yonder,” Chuck Lesser, Scottsdale, AZ.

Modern Stereo Transparencies

"Beautiful Nude Girls in 3-D,” Walter Sigg, Swartswood, NJ.
"U.S. Army in Action,” Bill C. Walton, Columbus, GA.
"Halloween III,” Doug Doughty, Saginaw, MI.
"Sail Days,” Doug Doughty, Saginaw, MI.
"Views of the Upper Mid-West,” Ned Skillman, Oak Park, IL.

Stereo Equipment

"Brackett Dissolver,” Robert Brackett, E. Sandwich, MA.
"Stereo Box Camera—Home Built,” Richard Eveleth, Highland Park, IL.

Non-competitive Open Category

"Color Anaglyphy II,” Craig F. Daniels, Red Wing, MN.
"Are Vern and Kit Having Fun Yet?” (Anaglyphic poster), Bob Staake, Saint Louis, MO.
8” x 10” Nimslo Print “Old Chevy,” Louis Winter, Monroe, MI.

Special Non-competitive Exhibits

"NSA Artifacts,” assembled by Gordon D. Hoffman, Fond Du Lac, WI.
"The Stereoscopic Society SUPER FOLIO of prints,” assembled by N.B. Patterson, Wesleyville, PA.
"Selections from the NSA Oliver Wendell Holmes Stereoscopic Research Library, St. Davids, PA,” assembled by Ray and Marge Holstein.

*Indicates “Best in Category” award.

The MERITORIOUS SERVICE AWARD for contribution of time and effort to the NSA went to better-late-than-never Stereo World Editor John Dennis. The award for GENEROUS FINANCIAL SUPPORT OF THE NSA went this year to long time NSA member Raymond Haines Jr. for his generous donation to the Holmes Library. A special DISTINGUISHED SUPPORT AWARD went to Dwight Cummings for his very generous contribution, through his company, W'y east Color, of the color preparation and separation materials and work for the March/April '88 color issue.

Guest speaker Russ Young followed the awards ceremonies, favorably comparing the NSA with other interest organizations, and stereo collectors and dealers with others in the historic photography field. Under the title, “Photography and the Universe,” he was able to touch on virtually any aspect of stereo (or anything else) that he wished! Speaking of the volunteer efforts contributed by so many NSA members over the years, he observed, "Most organizations I've known, when they get past about a hundred people, they have to get some kind of part-time staff. They need to do to share that NSA enthusiasm with other people who are interested (it took me a long time to find you guys). The key mission is, if you see somebody standing in a..."
First winner of the new "Memorial Award" for best article on a modern stereo topic in a recent issue of Stereo World, Norman Patterson accepts his plaque from Lou Smaus.

Latest in home made stereo fashion is modeled by NSA and Stereoscopic Society member Judy Proffitt. The views are color copies of some of her stereographs, under clear mylar sewn to the fabric.

Three of the more knowledgeable stereo collectors one is likely to find gathered in one place. George Allen (seated), Verner Connover (right), and the convention's guest speaker Wm. "Russ" Young (lower left) at the trade show. (Stereo by Brandt Rowles.)

camera shop with a stereo camera around their neck, ask them if they're members. Spread this! Of all the things that are being spread in America, this is one of the few good ones going around right now.

"Something we all have to think about is what happens to our collection when we die. I've seen some incredible stereo collections go into the trash, when there was literally no communication with the kids or grandchildren. . . . Put something in your will, it just takes a few sentences. I'm not talking just about collectors. I'm talking too about all of you who shoot stereo. Leave your views also, to be placed in some decent archives . . . First of all, find the right archive for your material. Most archives are interested in a specific concentration of material. For instance, the Museum of New Mexico, which is in my home town, collects New Mexican material . . . all of my New Mexican collection is in my will to go to them . . . Don't write your local archive off. They may take better care of artifacts, and have better cataloging than the big ones."

"One criteria is, leave it to a place where people will look for it. You can leave a wonderful collection of say, western American views to a museum, let's say, in Florida. Nobody will ever see it. Nobody's going to Tallahassee to look for a collection of western views. Find the right archive, and leave it to one with an interest in your collection. And find an archive that will take good care of it. Narrow it down to the ones you think would be interested. Then go in and say, for instance, 'I'd like to see what your American Indian views look like'. Do they treat you well? Can they find them? Have they been taken care of? Do they bring them out in a shoe box? I was horrified at the Smithsonian's photo collection. I requested the first Daguerreotypes made through microscopes and telescopes—and they come to me loose, loose uncovered Daguerrean plates in Kodak film boxes—10 to 15 to a box with nothing to separate them."

"Don't leave things to the big archives, assuming that they'll take care of them. It's a bad assumption. Often the regional archives, state and local archives, will take the best
care of your things... Don’t pre-
sume that leaving it—even to your
family—is the correct solu-
tion... Think these things out.”

Thanks To —
Mary Ann and Wolfgang Sell, who
co-chaired the convention.
C. Wesley Cowan, Trade Show
Manager
John Waldsmith, Convention Coor-
dinator and Exhibits chairman
Pat Wilburn, Secretary
Jack Wilburn, Treasurer
Roger Janzen, Media Coordinator
Dave Wheeler, Spotlight Auction
chairman
Robert Duncan, Auctioneer
Bill Duggan, 3-D Projection
Brandt Rowles, Event Stereographer
And everyone else who stepped in to
help where needed!

Potential bidders mob the tables of auction items just prior to the well stocked and well at-
tended 1988 Spotlight Auction, organized by Dave Wheeler, right. (Stereo by Brandt
Rowles.)

Next Year—NSA Portland '89

Next year’s NSA Convention
will be in Portland, Oregon,
August 4, 5, 6 & 7. That’s right,
plans are for four days, Friday
through Monday, to allow for ex-
panded scheduling in conjunction
with the 50th anniversary of the
View-Master, invented and in-
troduced in Portland in 1939.

With the exception of activities at
the View-Master plant planned for
Monday the 7th, all functions will
take place in the Lloyd Center Red
Lion Inn. Registration cards for con-
vention rates will be inserted in a
coming issue. Plan now for an ex-
tended Oregon vacation next year to
celebrate the 50th anniversary of the
View-Master, the 150th anniversary
of photography, or any other excuse
you can think of, if you think you
need one.

A Call for Program, Seminar,
or Workshop Ideas

Any and all proposals for projec-
tion programs are welcome, and we
invite you to send in as detailed a
summary as you can - as soon as
you can. While most shows will in-
volve some form of 3-D projection,
some subjects can be well illustrated
through flat projection, and others
are best covered in more of a lecture
style presentation. Remember, the
more elaborate your idea, the sooner
we need to hear about it to deter-
mine if there is room on the
program and make projection ar-
rangements.

Subject matter is open to any
historic or modern mater-
ial in most stereo formats, including
this year of course, View-Master
reels. Besides sending a text or sum-
mary, please estimate the number of
images involved and the length of
your presentation.

Send papers or questions to NSA
Portland '89, 5610 SE 71st, Port-
land, OR 97206.
The camera described in the following article turned out to be one of the most popular and photographed attractions of the 1988 NSA Convention in Cincinnati. The story of its design and rescue from oblivion was related in the Nov./Dec. '87 issue of Photographic Canadiana, the journal of the Photographic Historical Society of Canada, and is reprinted here with permission.

While the concept of alternately photographed left and right frames isn't an ultimate solution to in-camera creation of single-strip 3-D films, the ingenuity and craftsmanship that went into this camera make it a unique example of what a dedicated amateur can do. Thanks should go to Stan White for letting us know about this remarkable find, and for arranging its appearance at the NSA Convention where its film could be shown and its crank again turned.

Archie and Rowena Johnson, as seen through one of the prisms of his camera on a frame from one of his films.

Last October, you may recall that we held our annual Fall Fair at the Lakeshore Inn, Toronto. As part of the publicity, the Toronto Star ran a photograph of me with a selection of cameras from my collection. The article contained a paragraph stating that the public were welcome to bring along any cameras that they wished to have appraised while in attendance at the Fair. We were delighted with the response. Public interest was keen throughout the day and at times the lineup was four deep in front of the evaluation table. The Toronto Star publicity had certainly paid off! There is, however, an interesting little twist to this story!

After the Fair, I received several calls from individuals who could not attend, but who had taken the trouble to consult the telephone directory for my home number. They were all interested in the evaluation service we had offered. One call in particular was from a lady who claimed that her camera was too heavy for her to take to the Fair, and asked whether it would be possible for me to come to her home to inspect it. The lady identified herself as Mrs. Rowena Johnson. The camera in question was described as "a homemade movie camera that took pictures in stereo" which was designed and built by her husband, Archie.

My first impression was that the lady was mistaken, or at best confused, but she was quite adamant, and insisted that the camera did indeed take movies in stereo, and that she had actually seen them. Obviously, I was curious to see this "wonder" machine, even if it was an amateurish contraption, as I suspected. I made an appointment to visit her the following Sunday. She lived in a modest two storey home in a fashionable part of town, and the interior gave no indication of the type of wealth necessary to provide a sizeable budget for expensive photographic experiments. Mrs. Johnson was very gracious, and as we sat in the living room, she gave me a thumbnail sketch of her husband.

It seems that he became interested in stereo motion pictures around 1935, and since there was no equipment on the market for the do-it-yourselfer he decided to design and build his own stereo camera and projection system. She had very little knowledge of the early development of the system, most of which had taken place prior to their marriage in 1940. He continued with his experiments however for the next ten years, during which time he contacted both Bell and Howell Co. and R.C.A. Having received no encouragement his interest began to wane, and he discontinued his experiments. Mr. Johnson, whom I have not yet met, is now 97 years...
If my guess is correct, the principle was for the images to be projected sideways to the central prism and then to the film. When the camera was cranked, the central prism reciprocated up and down registering the images from the side prisms. The side prisms were alternately baffled so that only one image at a time registered consecutively on the film.

The prisms could be moved apart and rotated—one knob carrying out each function for both prisms. A single pointer was operated by both adjustments so that the pointer could always be kept in the null position by a combination of both movements. We don't know if Mr. Johnson used this for his initial adjustments and then used the camera with a fixed window, or if he changed the window position during shooting.

The next step was to find out how the images were projected in stereo. Knowing that I would need considerable time to study the camera, I asked if I could borrow it so that I could examine it further. Graciously, Mrs. Johnson suggested that I might like to keep the camera for my collection and expressed the wish that I could, in some way, generate some interest or recognition for her husband and his invention. The publication of this account in Photographic Canadiana is a means towards this end. When I inquired about the films and how they were projected, Mrs. Johnson admitted she did not know, but the projector and films were in the other closet and that I might as well take them.

From some footage of a parade in Toronto, two successive frames are shown here side-by-side. One of the limitations of the system can be seen in the horse's rapidly moving leg, which would require much faster cranking (and projection) if the alternate left/right exposures were to keep up with it.
A fascinated NSA crowd watches as the crank is turned and the gears, cams and prisms go into action.

along also. With her permission, I searched the workroom for the better part of two hours, putting together all the bits and pieces pertaining to motion pictures, including some fifty or sixty film loops about six inches in diameter. Mrs. Johnson indicated that these loops had been used in stereo process, but did not know the procedure. She only knew that she spent hours coloring these loops by hand, each frame alternately in red and in green. I also found a few pair of cardboard stereo viewing glasses, with the usual red and green celluloid lenses.

In my efforts to learn as much as I could about the idea and development of the Johnson invention, I inquired about the designs, drawings, plans or sketches. Nothing. On a return visit to the Johnson home I have not been able to find a shred of information about the building of this camera. No machine shop invoices, parts bills or notes concerning it appear to exist. My guess is that all documentation was contained in one file and was probably discarded by some unknowing family member.

On my return home, being excited at the prospect of making a photographic discovery, I set up the projector immediately. It was a standard Keystone 16mm silent, model A 82, with no apparent modifications or special effects that might have been used to create a stereo effect. I threaded a film and switched on... Nothing but jumbled images of a school band marching on a parade ground appeared on the screen. No matter what I tried, glasses or no glasses, red and green or green and red, nothing worked. And yet, Mrs. Johnson was absolutely positive that the stereo feature did work. The following week, the P.H.S.O.C. met at my home, and after our meeting we viewed the film. There were all sorts and varieties of suggestions on how we might make it work. From Polaroid filtration to spinning a red and green disc in front of the projector lens, but to no avail. Polaroid and other methods were not available at the time that Mr. Johnson was conducting his experiments, and I was determined to discover his method.

This problem bothered me for a week or so then BINGO, I remembered the loops. With a little guess work, I surmised that the loop must run in the film gate along with the regular film. A double layer of film going through the gate! With the loop frames painted alternately green and red, and with the operator wearing the green and red glasses it HAD to work! I rushed home from work and set up the projector again. I was more excited than the first time that I had set it up. I threaded the same film and with little difficulty succeeded in threading the loop as well. I put the glasses on, switched off the lights, switched on the projector, and there it was, the marching band in living stereo. Hallelujah! So simple yet effective, and to me, a stroke of genius. I spent three fascinating hours glued to the screen watching this man's historical dedication to producing a 16mm stereo image. The stereo effect is into the screen, the action does not jump out at you as in later stereo movies, and of course they are in black and white. He experimented with many subjects, mostly family and scenery, and the exposures are all excellent. I observed that he had no panhead on the tripod and consequently the action moves across the viewing area. He was not able to follow the action as we would today. Also, the camera is relatively heavy and somewhat awkward to handle which made hand-holding while hand-cranking out of the question.

Unfortunately, the only documentation or history chronicling this unique Canadian invention are the disappointing rejection letters from manufacturers in the photographic industry. I trust that I will have an opportunity to meet Archie Johnson, and somehow convey to him my admiration for his remarkable invention.
The Society

The age old question of whether the chicken or the egg came first may have no answer. Sometimes it is just as difficult for some of us to pinpoint whether an interest in making stereographs or collecting stereographs came earlier. In my case I can not say for certain which was first but only that both developed together from modest beginnings nearly thirty years ago. It is true that I had considerable prior experience in photography and especially in black and white printmaking and, at that time, little knowledge of either the rich history of photography or the collecting of photographs. So, I may have made my first stereograph before I collected one.

What will Tomorrows' Collectors Collect?

One thing is certain! One cannot collect what is not produced. It is often heard in The Stereoscopic Society that if people like us are not encouraged to make stereo views there will be little to collect of these times in the future. Good commercially produced stereo has pretty much dried up since the relatively enlightened glory days of Sawyer's Viewmaster. Amateurs can make a less than comprehensive record of the passing parade but cannot produce the quantities needed to support a vigorous collecting hobby. As old commercial views disappear into collections, they become harder to find, prices rise beyond reason, and new collectors have nowhere to start at a modest level. Certainly, one can predict that the vigor must soon be gone from an interesting hobby under such constraints. Like coin collecting and the popular decline one can trace back to the removal of silver from circulating coinage, we may find a hobby taken over by a relatively few well-heeled investors whose interest and knowledge of the hobby begins and ends at the bank. Of course, those interested only in making stereographs are unaffected by the problems peculiar to collecting.

It is not easy for Stereoscopic Society members and other amateurs to add to the reservoir of stereo views in our common heritage. Although there have been about four decades of widespread color transparency activity, it has not shown itself to be the sort of thing that is collected very much. Even the legacy of a superb amateur's work is often ill-treated by the survivors. Such views have been unceremoniously disbursed or even destroyed. (What will they do with your 'junk' when the time comes?)

Stereo prints may fare a bit better. If they survive the initial separation of trash from treasure and get to a dealer they might get picked over by collectors quite thoroughly. I have observed and participated in such picking. Good subjects by a skilled amateur can be valued appropriately in print format.

Transparencies are usually unique pictures...one of a kind. Copies can be of good quality if fussied over, though never quite the equal of the original. But commercial photo services may not fuss at all...it is my experience that few of them are capable of focusing a lens. The original is probably the only picture in

In this 1977 stereo view by APEC member Michael Chikiris, Buffalo Bills quarterback Joe Ferguson gets a greeting from an old friend, Terry Bradshaw of the Pittsburgh Steelers. Both played college and high school football in Louisiana. Taken at Three River Stadium, Pittsburgh had won the game. The Steelers were the terror of the NFL in those days.
full quality.

It is nice to say that print format can be duplicated over and over and that a favorite view need not be unique. But in reality, Society printmakers and others often make, with much fussing, the best print or two that they can achieve and then move on to the next picture. Probably only a few prints, at best, exist of any particular amateur stereograph.


An attempt was made within the National Stereoscopic Association in 1975 to form a new version of the mid-19th century Amateur Photographic Exchange Club (whose issues are highly prized by collectors today). It was envisioned that about twenty members would each produce a 3½ x 7” stereo viewcard for each of the other members at two month intervals. Each view would be appropriately labeled with relevant information. 2400 views per year would result on whatever contemporary subjects struck the printmakers’ fancies. For those of us who took part it was indeed an experience, though it never operated fully as planned. The first exchange was scheduled for January 1, 1976.

At no time was there ever a full complement of twenty active stereographers...seventeen was the top participation and fourteen was a truer figure for the first year’s exchanges. These figures dwindled down to about seven before the exchanges ceased in 1980. I believe I sent stereographs in twenty-nine exchanges over the five year period. The most faithful participants received about seven stereographs back for every ten they sent out, over the long haul.

Although it lasted only four and a fraction years, APEC exceeded the lifespan of its most famous 19th century namesake. I think it unlikely that a similar group would last longer, although a dedicated group of 6 or 7 printmakers might be able to pull it off. It is quite a commitment to produce good quality stereo views every two months and it is easy to fall behind. One by one the participants resign, officially or by default. Reality triumphs over high expectations.

But overall, the APEC experience was very rewarding. I received quite a few excellent modern stereographs for my collection. More important, we learned how to make stereographs, correcting errors as we went along and teaching one another.

A special bonus paid by APEC was collected by and benefited The Stereoscopic Society. APEC members helped restart the Print Circuit and were able to pass on what they had learned about viewcard making to new Society members and help beginning stereographers get started. The Society circuits are not so demanding as APEC. One only needs to produce 12–14 viewcards per year to participate in both the regular and speedy circuits. Transparency makers need to average about one stereo view per month for full participation. And one gets all of these views back eventually with critical comments, assuming all packages entrusted to the postal service or UPS have a safe and pleasant bon voyage.

**Join the Society**

Stereo photographers! Take part in the adventure, join the Society and double your fun. Contact the Corresponding Secretary, Jack E. Cavender, 1677 Dorsey Avenue, Suite C, East Point, GA 30344.

**Did you ever wonder where comic strip artists get the ideas for their characters?** This 1977 APEC view by Harold Fisher may suggest an answer. Dick Browne of HAGAR THE HORRIBLE is seen at Old Mill, Ithaca, NY. Browne also draws HI AND LOIS and has been involved with Mort Walker in BEETLE BAILEY. (Did you know that Beetle Bailey is Lois's brother? . . . today's trivia)
Our four views this issue come to us from the Robert G. Wilson Collection. The first three views are all pasted on orange-colored, cabinet-sized mounts fairly common to the 1875-1890 generation of stereoviews. The concluding image has been attached to a standard-sized, neutral-toned mount.

We begin with a rather fascinating clock that must stand some 7-9 feet tall. It appears to be fashioned from four distinct parts. There is a long wooden base cabinet topped with a marble slab. On top of the base sit three towers, each one clearly separated from the others. The tallest tower is at the center and contains the clock face as well as two other dials. All three of the towers are decorated with three dimensional figurines that appear to be capable of movement. Clearly recognizable just above the clock dial are a skeleton and an angel. In addition, at the very peak of the center tower are three ladies and just below that are figures that may represent Christ and his disciples (not all visible at once). The lower part of the right tower appears to house small pipe organs. A large dial that occupies a prominent position at the center of the base cabinet has the appearance of some type of astronomical configuration. The entire clock is overflowing by several American and two tri-colored flags (of the latter, one has vertical and one horizontal stripes). Although this particular card bears no identification, I did manage to find an identical image at an antique shop in New England this past winter that bears the title "Engle's Mammoth Pennsylvania Clock." Can anyone provide us with some timely facts on either Engle or his clock? How about its present day location? We would be happy to hear from anyone who might be harboring either the original or a copy of this clock in their living room!

A crowd of about thirty people have posed for the photographer in our second view. Consisting mostly of men, the group stands before a clapboard commercial building possessing a prominent false front that gives the view a decidedly western feel. A large sign atop the structure reads "Land Bought and Sold." Other signs are either washed out by the brilliant sunlight or just blurred enough to be illegible. The image itself is trimmed at the top in the fashion of A.J. Russell, although the time period is probably a bit too late to be his work. Is there another, identified, image of this "Century 21" predecessor existent in someone's collection?

Our third location is probably Maine. This is indicated by the blindstamp of C.A. Paul placed diagonally at the lower left edge of the mount. Darrah notes that Paul was an active stereographer in the town of Skowhegan during the 1870's. The image shows the interior of either a church or a meeting hall. The deacon's bench type seating and the small organ near the stage area at the left indicate the probability that the building actually serves mainly as a church, although there are no other visible items of religious significance. A patriotic motif has been set up on the stage facing the available seating. Visible are ten flags, two stacks of rifles (one on either side of the stage), many yards of bunting, and numerous flower ar-
rangements. Even the speaker's rostrum and the chandelier overhead have received a heavy dose of the decorator's attention. Central to the whole theme seems to be a large portrait of a distinguished looking gentleman that hangs before the mass of bunting on the far wall. Neither Robert nor I recognize the man although he must have been a well-known figure locally, if not on the state or national levels. There are no clearcut indications of just what was to occur here but two likely alternatives might be either a political/election meeting or a funeral. Now that we've made an educated guess (and hopefully one not too wild and wooly), perhaps someone can fill us in on the story.

Photographer J. Hall of Great Barrington, Massachusetts can be held responsible for not identifying a piece of his work in our final new subject this month. We are looking at what resembles a small-town fair, or perhaps a society gathering of some sort. The structures visible appear to be permanent but only on the order of our modern roadside fruit stands or booths at a local carnival grounds. From the one sign in sight we can conclude both that ice
cream is available on the grounds and that the Falls Village M. (or H?) E. Society has representatives present. A quick check of a New England map reveals there is a Falls Village in Connecticut some 25-30 miles distant to photographer Hall’s hometown base. Could this be the location of this particular image? Is anyone familiar with an M.E. or H.E. Society? One final possible clue is the handwritten date Sept. 11, 1879 on the reverse side of the mount. This could be the date of the event or simply a date of purchase for the card.

We certainly struck a responsive chord with the view of “The Five Points” on page 36 of the May/June issue. No less than eight responses were received. Thanks go to Bernard Fishman, Israel Stollman, George Moss, Bob Tucker, Lloyd Phillips, Len Ances, William Brey, and Jeff Richmond for their enlightening commentaries.

“The Five Points” delineates a notorious slum district in New York City’s old Sixth Ward on the Lower East Side of Manhattan. The name resulted from the coming together of five streets... Cross, Anthony, Little Water, Orange, and Mulberry. Over the course of the years these streets were altered. Cross became Park St. and Orange became Baxter. Anthony was extended to Chatham Square and was renamed Worth. Little Water simply vanished. The picnic sign visible in our view undoubtedly referred to a nearby Chatham, either the Square or the Street, located a short distance to the east of Five Points. Modern visitors to the area would view such sights as Columbus Park, the government buildings of Foley Square and the apartments of Chatham Towers.

The entire area had a reputation throughout much of the nineteenth century as the roughest area of the city. Contemporary histories of New York City generally devoted a sizable section or even a whole chapter to noting the disreputable nature of the area. Even visitors from abroad were well aware of the criminal and gang element that flourished there. Look at the view again as you read this excerpt from The Great Metropolis: A Mirror of New York written in 1869 by Junius Henri Browne:

“...The Five Points, with its narrow, crooked, filthy streets, its low, foul, rickety frames; its ancient, worn-down, unsavory tenements, its dark, mephitic green-groceries; its noxious liquor dens; its unsightly cellars; its dingy old clothes and old furniture establishments; its muck, and mire, and slime, reeking, rotting, oozing out at every pore of the pestiferous place... The first thing that impresses you is the swarm of children in every street, before every house and shop, and at every corner; children of all ages and color, though the general hue inclines to dirt.”

Not exactly the vacation spot of the nineteenth century! For more information, should you so desire, try any of the following books: Dunshee’s As You Pass By, Asbury’s The Gangs of New York, Black’s Old New York in Early Photographs, and Lightfoot’s 19th Century New York in Rare Photographic Views. The latter book includes a copy of our view as Plate 87.

We have also received three responses concerning the first view from that same issue. Dale Hammerschmidt, Kurt Fechter and John Wrigley all recognized the topography as the birthplace of Mozart... Salzburg, Austria. One unmistakable landmark is the 12th Century fortress Festung Hohensalzburg riding the crest of the Monchsberg, the large hill at the immediate left. Visible high on the hill directly across the river is the monastery Kapuzinerberg. The famous Mirabel Gardens are located just beyond this promontory. One might also recall that at least part of the film The Sound of Music was shot on location here in the 1960’s. 

Send information about these or other past Unknowns to Dave Klein, 14416 Harrisville Rd., Mt. Airy, MD 21771. Please do not send any views for the time being because we have a good backlog to draw upon.
Newviews
Print Mounting by Mail

If you are among those who cringe at the thought of mounting stereo print pairs (and/or lack the time to even try) the Red Wing View Company is ready to come to your aid. According to a new service/price sheet issued in August, you can send in exposed color negative film for processing, printing and mounting, or existing negatives for prints from selected frames plus mounting.

All pairs are trimmed for an appropriate window with separations of about 79 to 83mm, then open mounted on 3½ x 7 inch cards. Negatives can be from any standard 5p camera like Realist, Kodak, Revere, etc. OR, from a Macro Realist, Nimslo, blanked Nimslo, or Teco-Nimslo. There is a $10.00 charge for film processing, and a charge of either $2.00 or $3.00 per mounted pair for prints depending on Red Wing View or commercial printing.

Craig Daniels, company founder and designer of the highly regarded Red Wing Viewer (see Stereo World, May/June '86, page 28) sees the mounting service as providing a "missing link", now that developing and printing is commercially available for color negs from Realist format and Nimslo cameras, along with do-it-yourself mounting materials. Red Wing mounts the prints on dark grey, corner rounded card stock with an unprinted, light back for notes. All prints are trimmed to 3" widths—or less in cases where window adjustment is needed (which is continuously variable in prints, unlike slides).

For a price sheet/order form, or information on special mounting needs, send a SASE to Red Wing View Company, 1234 Phelps, Red Wing, MN 55066.

Back on the Spool—127 B&W

If you've been itching to shoot some black and white film in your Coronet stereo camera (or any other camera using 127 film) you'll be happy to know that a source exists. EFKE Film of Yugoslavia has started making the former Adox R 21 B&W 100 speed film in the 127 format. The U.S. importer, Jobo, may need to supply it to some of their retailers as a special order. Contact Jobo Fototechnic, 251 Jackson Plaza, Ann Arbor, MI 48103.

"World Viewing" Update

Yet another source has surfaced for 10" focal length plastic lorgnette viewers. They are now available for $1.49 ea., postpaid, from: A Photographers Place, PO Box 274, Prince St., New York, NY 10012.

This column depends on readers for information. (We don't know everything!) Send information or questions to David Starkman, P.O. Box 2368, Culver City, CA 90231.
Ham and Stereo on Rye?

In what can often seem like an international looking stereo camera design, most of the ‘entries’ never go beyond drawings or rough prototypes. But 3-D FOTO WORLD, the European 3-D equipment mail order company, is marketing (and actively advertising) stereo cameras that look like bricks of Swiss cheese!

If you notice no lenses in the illustration, it’s because these ‘some assembly required’ cardboard cameras use two foil pinholes and a sliding paper shutter to produce the image pairs on 120 film. While 3-D pinhole photography is hardly in great demand, 3-D FOTO WORLD clearly hopes this unique novelty item will be seen as the ideal gift for “the collector who has everything.”

A pinhole camera’s ¼” to infinity depth of field can’t be easily exploited in any fusible stereograph, and the slightly soft focus can be frustrating in a viewer. But the ability of a pinhole to make all moving objects or people disappear from a room or street during the long exposures can be enhanced by the added realism of stereo to these often dreamlike images. Most serious pinhole enthusiasts of course build their own cameras of heavier wood design for larger format film or paper. (For stereo pairs, the images would then be copied and reduced.) And they generally include a tripod socket, too, but then they miss the thrill of shooting with a brick of Swiss cheese... Two other box designs are available in the current catalog, where the cameras are priced at about 40 dollars, U.S. The catalog, with ordering instructions in English, is available from 3-D FOTO WORLD, F.ach, CH-4020 Basel, Switzerland. (See Stereo World, May/Jun. ’88, page 17.)

3-D in CMP Greeting Card Show

Stereographs are included in the invitation to send any and all original photographic holiday greeting cards to the sixth annual California Museum of Photography Photographer’s Greeting Card Show, scheduled from Dec. 3, 1988 to Jan. 8, 1989 at the University of California, Riverside.

Early entries are encouraged. The show continues to grow as cards are received and submissions are accepted through the last day of the exhibition. This year, the cards will be on view day and night in the front windows of the museum’s Watkins House facility on the university campus.

All cards submitted become part of the exhibition. There is no entry fee or jury and all cards become part of the museum’s collection and cannot be returned.

Photographers of any age, amateur and professional, may submit photograph-based holiday greeting cards. All photographic processes are accepted, including stereography, photographic collage and hand colored works. Cards may be any size. All submissions must include the sender’s name, address and telephone number.

In past years, cards have been sent to the CMP from all over the United States and as far away as Japan, Ireland, West Germany and Canada. One family has sent a sample of every card it has created since 1940. Images and messages range from avant-garde to highly traditional, humorous to serious, and everything in between.

Entries should be mailed to: Sixth Annual Photographers’ Christmas Card Show, California Museum of Photography, University of California, Riverside, CA 92521.

On Beyond Nimslo

“Reel 3-D Enterprises’ Guide to the Nimslo 3D Camera” is the recently released, expanded and revised second printing of “The Nimslo 3-D Book” by David Starkman and Susan Pinsky. The new edition goes into more detail on several Nimslo uses covered in the first, and includes tips on stereo prints from Nimslo negatives as well as the use of slide film.

Also covered are methods of close-up Nimslo photography, the use of film speeds other than 100 or 400, manual aperture control, use of Nimslo flash and others, hyper-stereos and double exposures, and the Teco-Nimslo and Burdlo modifications. A completely new section in this edition includes technical and service information, with exploded drawings of the internal workings of the camera, parts diagrams, and wiring and circuit diagrams for the switches, meter, L.E.D.s, etc. The section also includes disassembly and trouble shooting instructions.

The tips in the book will also apply to the “Nishika” camera, the yet-to-be seen, new and somewhat improved version of the Nimslo announced by Nissei Corporation, the present processing service for lenticular 3-D prints from Nimslo color negatives. (3, Sunset Way, Bldg. E, Henderson, NV 89014.)

The new guide is available only from Reel 3-D Enterprises, Box 2368, Culver City, CA 90231 for $11.95 plus $2.00 shipping.

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Imagine the thrill of making a drawing and then seeing the picture you’ve just produced floating in space before you! The picture could be that of a pyramid, of a house or even of the earth. Or it could be a portrait, a figure study, or a more detailed and structured pictorial scene. Drawings such as these were recently exhibited at the 3-D Art Exhibition held in conjunction with the Sixth Congress of the International Stereoscopic Union on October 1-5 in Interlaken, Switzerland. The purpose of this and succeeding articles is to place the basic tools and techniques for making such drawings in the hands of the readers of Stereo World.

This will be the first of a series of articles describing how to make anaglyph and stereo pair drawings. In this first article we will introduce you to the basic materials needed and to the drawing of the stereo line and of a few stereo objects. Later articles will explain procedures for drawing stereo circles and ellipses, cylinders and cones, spheres and ellipsoids. We will introduce the concept of the stereo grid, a technique which permits using the above basic structures to create detailed three dimensional form and decoration. In so far as possible, this will be a “how to do it” series of articles. Basic theoretical discussions will be kept to a minimum and the reader interested in the theory must await publication of my book on stereo drawing.

Our primary concern will be with anaglyph drawing, that is, drawing in red and cyan. Somewhere in this series there will be a discussion of how to convert anaglyph drawings into stereo pair drawings, similar to the stereo photographs you have been collecting. Anaglyph drawing is selected as the starting point because this technique follows naturally when the basic laws of perception are applied to 3-D drawing. Furthermore, anaglyph drawings can be made as large or as small as you wish while stereo pair drawings are normally (but not necessarily) restricted to a size that fits into a stereo viewer. There is no reason why a wall size anaglyph mural could not be created, a feat difficult to achieve with a stereo pair drawing. On the other hand, stereo pair drawings can be produced in color, an advantage which will be demonstrated when we discuss how to convert your anaglyph drawings into the stereo pair form.

Materials
Anaglyph drawings can be produced using almost any drawing or painting technique, restricted only to red and cyan (blue-green) colors. In addition to a good grade of white paper (colored papers introduce complications, the discussion of which would lead us too far astray), a pair of anaglyph glasses are necessary. (If you don’t happen to possess a pair, they can be purchased from Reel 3-D Enterprises, Inc. P.O. Box 2368, Culver City, CA 90231.)

Drawing material may be colored or pastel pencils, inks, watercolors, oils or pastel chalks. The beginner will find pastels or pastel pencils the best first choice because, with these, lines improperly drawn (and there will be many such) are easily erased and corrected. Regardless of your choice, the colors selected have one fundamental requirement: the reds must draw lines which are invisible when viewed through the red filter of your anaglyph glasses and the cyan colors must be invisible through the cyan filter. It is relatively easy to find red colors which fulfill this requirement but difficult to locate cyan colors which do so. With many of the latter a faint “ghost” image is often the best invisibility that can be achieved.

The selection of the proper colors can be a time consuming and expensive process. At its best it requires a friendly art supply proprietor who will let you go through her stock, letting you draw lines and viewing them through your anaglyph viewer. Such dealers are few and difficult to find. The selection process is more often a matter of purchasing colors that look like they might work and evaluating them at home. In this way I have managed to accumulate an astonishing number of red and cyan colors, most of which are unsuitable for anaglyph drawing. Some of the color pencils I have found satisfactory are listed below and should help in getting you started drawing.

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Red
Baignol & Farion, Decor # 28
Staedler, Karat # 25
General, Multi-Pastel Chalks, Orange
# 408
Cyan
Berol, Non-Photo Blue # 761 ½ (the best cyan)
Berol, True Green #751
Baignol & Farion, Decor #35
General, Multi-Pastel Chalks, Aqua Green #4424

Colored drawing inks are ideal for producing clear and crisp line drawings. I use Pelican’s Scarlet with Winsor and Newton’s Emerald (#959) in drafting pens to produce anaglyph lines of different widths. But wait with this technique until you have acquired some experience with the colored pencils. Your ink lines must be perfectly placed the first time you draw them.

The Anaglyph Drawing
An anaglyph drawing may be thought of as a collection of red and cyan points placed in a left to right relationship to each other. Every point of one color must have a point of the other color directly to the left or right of it. We will refer to such points as the corresponding points of the stereo point. Two corresponding points define one stereo point, the apparent position of which in space is determined by the separation of the corresponding points.

Most stereo photographs have the 3-dimensional scene situated behind the paper, the edges of the photograph acting as a window through which the scene is viewed. While this effect is often pleasing in photographs, few windows exist in nature. In actuality, we are free to reach out and touch objects; they exist in space around us. For this reason I prefer to produce stereo drawings so that the stereo images appear to exist in space in front of the paper.

In order for a stereo point, line or object to appear to be situated in front of the paper the red filter of the anaglyph glasses must be over the left eye and the red point, line or object on the drawing must lie to the left of the cyan point, line or object.

The formulas establishing the position of a stereo point in front of or behind the plane of the paper are derived in my forthcoming book and will not be repeated here. Instead we shall use Figure 1 to draw lines and objects so that they appear to be suspended in space in front of the paper. (The relationships plotted in Figure 1 are approximately true for short distances behind the picture plane provided that the red line is drawn to the right of the corresponding cyan line.)
**The Stereo Line**

Drawing a stereo line with the aid of Figure 1 is straightforward. One first establishes the position of one end of the line in space and then determines the separation of the corresponding points for the desired height. These points are then positioned on the paper, the red dot on the left, the cyan dot directly to the right of it. The above steps are repeated for the other end of the line and then the red dots joined by a red line and the cyan by a cyan line. The procedure also suffices for drawing curved lines. Position a sufficient number of corresponding points on the paper to establish the general shape of the curve and then with a French curve (or freehand, if you have a steady hand) sketch in the curve in red and cyan.

We will illustrate the use of Figure 1 by drawing some stereo lines, a stereo pyramid and the inside view of a chimney. It is convenient to introduce another definition at this point. We have seen that a stereo line consists of a red and a cyan line. Such lines we will refer to as the component lines of the stereo line. Likewise any stereo object which we draw will consist of a red and a cyan drawing of it and we will refer to these drawings as the component drawings of the stereo object. Thus we will draw a stereo line, a stereo pyramid or a stereo sphere and refer to their component lines, component pyramids or component spheres.

Factors affecting the apparent height of a stereo point above the plane of the paper turns out to be the viewing distance, the perpendicular distance from the eyes to the plane of the paper. In Figure 1 we restrict ourselves to two viewing distances, 40 centimeters (16 inches), an average distance for most reading, and 100 centimeters (40 inches), a reasonable distance for wall viewing of a drawing. The reader still uncomfortable with the metric system can convert measurements in centimeters into inches by dividing by 2.5. The curves are calculated for viewing with the line of sight perpendicular to the plane of the paper and for an interocular distance of 6.50 centimeters.

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**Fig. 2. Three stereo lines. All drawings © 1988 Horst Hoyer**

**Fig. 3. The stereo pair drawing of figure 2.**

**Fig. 4. Stereo pyramid.**
Since *Stereo World* does not print in color we will use three different line thicknesses to indicate cyan, red and black. Cyan will be indicated by the thinnest line, black by the thickest and red by one of intermediate width. We wish to draw a line extending up from the surface of the paper to a height of 8.5 cm. when viewed at a distance of 40 cm. Figure 1 requires that the separation of the component points be 1.8 cm. at this elevation. Since the lines originate in the plane of the paper, at zero height, their lower ends coincide. Figure 2 consists of three sets of such lines, each set having a different two dimensional length but all with their upper ends separated the same distance, 1.8 centimeters. The plane of the paper is indicated by the heavy dark line. In order to see Figure 2 as an anaglyph drawing you will have to trace the lines on to a clean piece of white paper. Trace the light line in cyan, the medium line in red and the heavy line in black.

Notice that the images of the stereo lines, when viewed through the anaglyph glasses, are real, not virtual. You can hold a ruler up alongside of any image and, providing nothing obstructs your view of the red and cyan lines, can actually measure its apparent height. When you do this for the three lines in the figure they all extend the same distance above the paper even though their two dimensional lengths are different. Sounds paradoxical, doesn't it? It's almost like saying that the shortest line is just as long as the longest. Well, isn't it?

Notice also that the apparent height varies with the viewing distance. For the sake of completeness, and for those readers who do not have the anaglyph colors or glasses, Figure 2 is redrawn in Figure 3 as a stereo pair view.

The Stereo Pyramid

As our next example we will consider a pyramid with its base sitting on the paper and with its apex at a height of 9.0 centimeters. Since the base of the pyramid sits on the paper, its height is zero, the right and left eye views of it will be identical and the red and cyan will therefore overlap. Hence we draw it in black. From Figure 1 we establish that for a height of 9.0 cm. and for a viewing distance of 40 cm., the corresponding points should be separated by 1.9 cm. At a convenient distance above the base we therefore mark off this distance in red and cyan and then connect these points to the three corners of the base with the appropriate colors. Figure 4 is the result, the hidden line of the base be-
An Inside View of a Chimney

As a final example we draw an inside view of a chimney. I would have liked the circumference to be circular but since circles will not be discussed until the next article of this series we’ve indulged in some artistic license. We approximate a circle by drawing a small sixteen sided polygon in heavy black lines to indicate the ground level of the chimney. Next are drawn lines in red (the lines of intermediate thickness) radiating out from the polygon. Since the top of the chimney is to be 6.5 cm. above the ground level, the corresponding points of these lines should be 1.3 cm. apart (Figure 1). Directly to the right of the end of each red line and 1.3 cm. distant we therefore place a cyan point. Each cyan point is then joined in cyan to the place on the polygon where the red component line begins. Finally the outer ends of all lines are joined in the appropriate color, resulting in the drawing of Figure 8. Figure 9 is its stereo pair view.

Some Concluding Remarks
Stereo drawing dates back to the invention of the stereoscope by Sir Charles Wheatstone in 1832. With the invention of photography a few years later interest shifted from stereo drawing to stereo photography. The recent revival of interest in the latter has also stimulated a renewed activity in the former. It is an evolving interest in a field of art which has been too long neglected.

As mentioned earlier, the objective of this series of articles is to provide you with the tools and techniques for producing stereo art. The articles will focus on producing some of the basic geometric forms in true perspective in the belief that these forms can then be manipulated and transformed by the artist into realistic representations of three dimensional objects.

Fig. 8. Inside view of a chimney.

Fig. 9. The stereo pair view of figure 8.
November 19, 20  (OH)
Ohio Camera Swap, Shadybrook Armory, Cincinnati, OH. Contact Bill Bond, 8910 Cherry, Blue Ash, OH 45242. Call 513-891-5266.

November 20  (NY)

November 20  (IL)
Chicagoland's Camera and Photo Show, Holiday Inn, 3405 Algonquin Rd., Rolling Meadows, IL. Contact PO Box 72695, Roselle, IL 60172. Call 312-894-2406.

November 20  (NY)

November 20  (PA)

November 27  (CA)
Pasadena Antique & Collectible Camera Show & Sale, Pasadena Center, 300 E. Green St., Pasadena, CA. Contact Anton Gottsankner, PO Box 5352, Santa Monica, CA 90405. Call 213-396-9463.

November 28, 29  (IL)
4th Chicago Area Camera Show & Sale, Holiday Inn O'Hare Airport, Rosemont, IL. Contact Sam Vinegar, 20219 Mack Ave., Grosse Pointe Woods, MI 48236. Call 313-884-2243.

December 4  (CA)
Buena Park Camera Swap Meet, Sequoia Club, 7530 Orangetherope Ave. Call 714-786-8183.

December 10, 11  (OH)
11th Cleveland Photorama USA, Holiday Inn - Strongsville, 15471 Royalton Rd., Strongsville, OH. Contact Sam Vinegar, 20219 Mack Ave., Grosse Pointe Woods, MI 48236. Call 313-884-2242.

PRIMARY STEREO

(Continued from page 15)
stereographer had to skip the others but did manage views of Jesse Jackson on the "whistle stop" train which took off from Laconia and wended its way to Concord. ("Whistle Stop" is not to be confused with the mock-up of a train which was set up at a mall to permit candidates to make impromptu speeches and image-producers to get some shots.)

The day after capturing the caucuses in Iowa, Senator Bob Dole was highly visible in New Hampshire.

To the delight of on-lookers, Iowa's Republican winner strolled about New Hampshire's State Capitol shaking hands in the best political form. The Stereo Kodak clicked.

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STEREO WORLD  September/October 1988

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angles of view. (Sometimes matching the separation of human eyes, sometimes not.) When nothing ends up pseudoscopic and the fused image resembles the planes and textures of the original, the image can earn the title “orthostereoscopic.” And when the image also displays the same form, scale, and relative position as the original, it can earn the ultimate title of “tautomorphic.”

The problem isn’t simply that Nuoptix fails some esoteric test of stereoscopic perfection. The problem is that it relies completely on controlled relative movement within the scene as seen through one lens. While the photographing of the action may involve angular changes similar to those that could be captured in sequential stereography, the presentation on the TV screen involves a system totally incompatible with two-lensed stereo film, video, or still photography. All 150 years worth of stereoscopic images could end up effectively locked out of use in 3-D TV if Nuoptix were to become THE popular format. Still images won’t work at all, and only some accidental tracking shots in 3-D movies could perhaps be trans-

lating. (In the same way that similar shots in flat movies could be presented in 3-D.)

It’s nothing to lose sleep over yet—just one of those format technology traps that video and audio writers go into at length. If the system remains a rare novelty, it could help generate more interest in all aspects of 3-D. Without the Moonlighting segment, it may be used mainly in commercials or to inflate interest in less popular shows. In that case, the Writers’ Guild of America may well deserve a special award from the NSA.