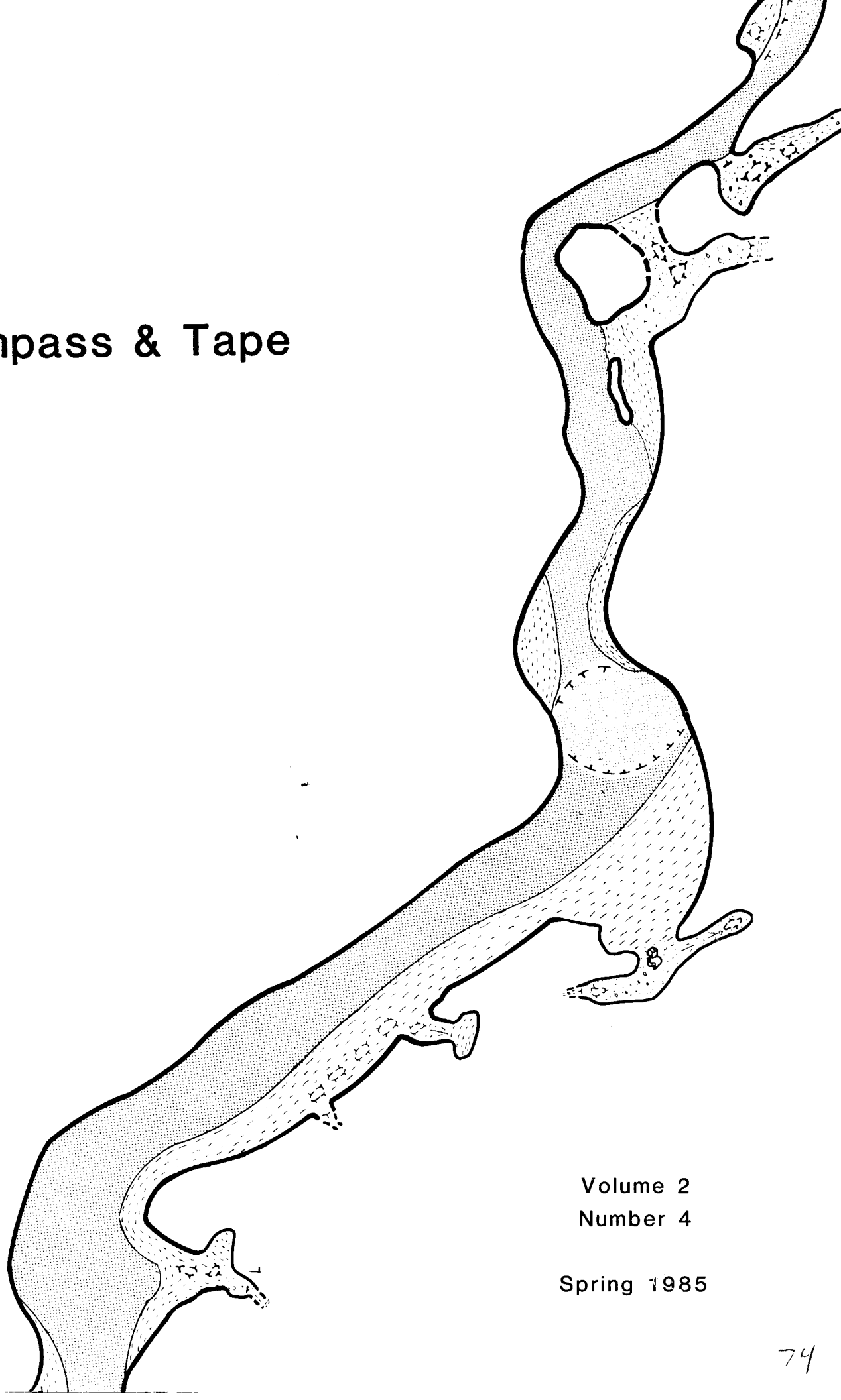
Compass & Tape



Volume 2
Number 4

Spring 1985

Compass & Tape

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COMPASS & TAPE is the quarterly newsletter of the Survey and Cartography Section of the National Speleological Society. Dues are $4.00 per year and include 4 issues. When paying dues, please give your NSS number and make checks payable to the NSS Survey & Cartography Section. Subscriptions for cavers who are not NSS members, Clubs, etc. are also $4.00 per year. Foriegn rates are identical for Surface Mail; inquire for Airmail Rates. Payment must regretably be in US dollars and checks drawn on US banks. The dues year begins at the annual NSS Convention. Those subscribing or joining afterward will recieve all back issues for the year.

Opinions expressed in C&T are those of the authors and don't neccessarily reflect those of the Section, the Editor, or anyone else.

Survey & Cartography Section (1985)

Chair: John Ganter, RD 3 Box 742, Bedford, PA 15522 814-356-3553
V-C: Paul Hill, 607 South 11th St, Salt Lake City, UT 84102 801-582-5847
Sec: George Dasher, 108 Shawnee Drive, Buckhannon, WV 26201
Tres: Ray Keeler, 5541 W. Hartford Ave, Glendale, AZ 85308

Submissions and General Communications

Please send articles, maps, letters, comments, dues, address changes, etc. to:

John Ganter
RD 3 Box 742
Bedford, PA 15522
814-356-3553

COVER: Part of Corinth Church Cave, Trigg County, Kentucky. Scale is just under 50 feet per inch and the shaded pattern represents water.

CONTENTS

Editor & Publisher: John Ganter

Centerfold Courtesy of Bob Richards

The Brunton Compass: A Solution to Suunto Problems

by Mike Futrell

After reading through all the C&T issues to date, I've noticed an enormous number of articles referring to Suunto instruments. Many of them focus on the problems that exist with the instrument's use and care. I have a solution for avoiding the irritating habits of Suuntos, such as leaking, fogging, cleaning, and repair. Leave them in the closet and take a Brunton!

I'm an avid user of both instruments, but given a choice will almost always opt for a Brunton. I'd like to express my reasons for this choice in support of Brunton use over Suunto use. My intention is not to stir controversy, because I do not believe that any caver who is proficient with a Brunton would ever bad mouth the instrument. Mind you, I know a few Suunto users who bad mouth Bruntons rather than admit that there is another correct and accurate way of surveying.

Most commonly, I have found that the individuals who choose Suuntos do so because of the ability to learn how to use them quickly. Even more appealing is the ease of use, speed and lower price. Having learned Suuntos and become proficient in a short amount of time, many Suunto readers find it an unneccesary hassle to become proficient with a Brunton.After all, Bruntons do take a few seconds longer to read. But why hurry up and wait? The sketcher is usually the slow person on the survey team.

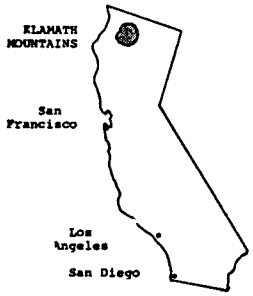
So why do many surveyors learn to read Suuntos first? It could be availability and popularity among one's grotto and friends. I addition to these reasons, fast learnability is likely to be a factor. A sketcher looking for an instrument reader when no experienced readers are available will probably teach Suunto rather than Brunton use to a novice in order to get underground in time to have a productive trip.

I believe that the Brunton allows much greater flexibility of body positions while reading. Your eye must only be somewhere in the plane of the shot, as opposed to always one inch behind the instrument and station as with Suuntos. I personally do not enjoy putting my face on a lot of stations, whether they are slimy or just plain awkward. Also, by holding the Brunton slightly away from the head and body there is less likelihood of something metallic affecting the compass. Another positive feature of the Brunton is that while reading the hairline, the arm and station light either line up perfectly or they do not. This leaves no question as to whether you took the correct reading. The Suunto azimuth requires eyeballing the station for alignment. In awkward positions and particularly steep shots this can make an accurate reading difficult. Often in conversations with Suunto advocates I've been told about all the places and situations where a Brunton can not be read. For example, steep downward shots and seven inch high crawlways.

To which I usually respond by questioning their Brunton reading ability. I've yet to encounter a shot that cannot be read with a Brunton, provided that you know how to use the instrument properly. And very frequently I encounter shots where I'm thankful that the Suuntos are at home and the Brunton is in my hand.

I also like the way Bruntons hold up under caving conditions. I think we've all dug down to our underwear looking for something not sopped in slime to clean a glob of mud out of the eyepiece of a Suunto. Meanwhile there's the Brunton man, lickin', spittin', and shootin'. Fog is the last thing on his mind. And leakage? Well, of course. Cave water gets into everything. So now you have a puddle in your Brunton and the needle is stuck to the glass. No problem. Pop the glass and rubber gasket off with a small sharp object. Clean and dry it, then reassemble. Now you're back in business, good as new.

Whether a Suunto or Brunton user, the important thing is that a caver should maintain proficiency with both. Inevitably, he will choose the one he feels most comfortable with under the expected caving conditions. In certain situations, such as low airspace stream crawls where the stations are on the ceiling, I would use Suuntos. However, neither Suunto nor Brunton users should rule out the other as a viable instrument. To attain proficiency with both allows for greater flexibility in survey situations. And we all know that more options gives us greater capacity to do what we like best: Survey! I for one would be very interested in seeing or writing more articles in C&T dealing with Brunton specifics.



Organization of a Large Mapping Project

KLAMATH MOUNTAINS, CALIFORNIA by Mike Sims

In 1972 and 1973, Lynne and I, though living in Fresno, California, became allied with Steve Knutson from Portland, Oregon. While caving together, we developed a number of ideas about project caving through many late-night campfire discussions. Although our ideas weren't completely worked out, we felt that, after observing the problems of caving groups and projects in several areas, we could do a better job - all we needed was a cave area, preferably something new and exciting. Gary Barret of Mother Lode Grotto had, for several years, been telling us about the Klamath Mountains and their potential for caves. In 1973, armed with information from Gary and from Ralph Squire, we began to search for caves in Northern California. We were guided to Paul Gibson Cave by the U.S. Forest Service, and found that it was the most significant cave discovery in several years. Subsequent trips to the Klamaths revealed several other small caves. So, thinking that we had our caving area, we formed the Klamath Mountains Conservation Task Force (the KMCTF.)

At this particular time, the NSS was pushing the concept of Conservation Task Forces. These were generally formed in response to some "threat" to a significant cave or caving area. Our thoughts were, that inasmuch as the Klamaths were a "new" caving area, we would form a conservation task force to promote cave conservation before a conservation threat developed - the concept of "preventive conservation."

We spent the winter making plans and securing official NSS sanction as the KMCTF. The next summer we continued to search for caves in Northern California, and coincidentally, Lynne and I moved to Oregon. In July 1974, Steve Knutson and Wayne Walent hiked into the beautiful glacial cirque of Marble Valley and we suddenly found ourselves in a caver's paradise. It seemed that there were caves everywhere we looked! Assembling the data from our first summer in the Marble Mountains, we found that our major cave was already the third longest in California and the fifth deepest in the U.S. ! And several other caves ranked high on the list of longest and deepest caves in California.

During the next winter, 1975, we began to re-formulate our plans, and also began to negotiate with the Forest Service. It was obvious that the Marble Mountains were something very big. We fought the alternate urges to "keep it secret- just for ourselves" or to go for the big ego trip with wide publicity. We chose a sort of "middle road" or cautious publicity within caving circles only, inviting cavers from all over California, but emphasizing the hardships and hazards.

We also realized that, in order to have some control over the situation and to meet the requirements of the Forest Service, we would have to get more organized in terms of surveying and working up the data from the surveys. We began to develop some loose standards regarding the data that we wanted from surveys. We also set up rules

for caving in the Marbles, primarily that caves were to be surveyed as they were explored, and that cavers entering the "serious" caves were to be adequately equipped. We set forth a standard format for survey books and encouraged cavers to follow the format. We asked that any caver who surveyed in the Klamath Mountains area provide us with a copy of their survey data. In return, we produced annual reports (called the KMCTF REPORTS) with maps and write-ups on each cave explored and surveyed during the previous year. We were always careful to give credit to the people who did the work in these reports. We also began an annual week-long caving session in the Marbles, called the "speleocamp" after a similar effort done by David McClurg at Lilburn Cave several years earlier.

In 1977, Steve Knutson and Dave Cowan made a connection between our two deepest caves, Bigfoot and Meatgrinder Caves, to create the Bigfoot Cave System, at that time the deepest cave in the U.S. at 1,205 feet. By the end of 1977, the KMCTF and associated cavers had located 43 caves and mapped 26 caves. Nine of the 15 longest caves in California were in the Klamath Mountains, as were 10 of the 20 deepest. By the end of 1978, Bigfoot Cave had been mapped to over 7 miles, thus making it the longest cave in California and the Far West.

By this time, we had pretty well developed our methods of organizing the cave surveys and working up the data. We were beginning to use a Radio Shack microcomputer to calculate survey data and to maintain files of information about the caves. We had developed a loose knit group of experienced cavers who were willing to endure the rigors of Marble Mountains caving to experience the thrill of finding virgin passage or virgin caves. We had also found a few people with the talent and willingness to ink the maps that were being regularly produced. And, we tried to become increasingly systematic in both the exploration and mapping of known caves and in searching for new caves. We developed a system of tagging the entrances of both caves and pits that didn't go, so that any cavers going to the Marbles could be certain that the cave they were entering was the one that they thought it was. And, our files, maps and records grew steadily, to the point that much of the space in our home is devoted to storage of Marble Mountains cave maps and information. Also, we aquired a more elaborate computer system, a printing press, a process camera, and many, many file cabinets.

In summary, our method of organizing for a large cave survey and mapping project was to try to: 1) give the participating cavers a unique caving experience, that of alpine caving, 2) give the cavers recognition for their efforts, 3) share the results of the work through publication of the KMCTF REPORTS, 4) try to influence and lead the cavers to caves that were appropriate for both their capability and desires, and 5) keep track of all the information, maps. trip logs, etc. and try to incorporate it into the reports and articles about the Marbles. As is obvious, none of the KMCTF accomplishments would have been possible without the dedicated efforts of a great many cavers.

79 (from THE CALIFORNIA CAVER; Fall, 1984)

Ed. note: See also Steve Knutson's "Marble Mountains Majesty," May 1985 NSS NEWS.

Number of Caves and Cave Maps for Some US States

State	Number of Caves	Number of Cave Maps
Alabama	2338	1600
Arkansas	1800	250
Georgia	327	208
Illinois	300	30
Kentucky	744	744
Louisiana	5	5
Minnesota	400	75
Mississippi	42	41
Missouri	4485	1669
Ohio	180	68
Pennsylvania	900	hundreds
North Carolina	426	410
Tennessee	3950	1000
Texas	1900	several hundred
Virginia	2456	many hundreds
West Virginia	2300+	About 1200

Total: 22550+ ???

Source: Jerry Vineyard, Missouri Dept. of Natural Resources. Data collected in conjunction with 1984 National Cave Management Symposium, Rolla, Missouri.

Ed. Note: Numerous states did not respond to Vineyard's questionaire. If you would like to provide information about centralized cave data in your state, or desire more information, his address is: Jerry Vineyard, Missouri DNR, P.O. Box 250, Rolla, MO 65401 314-364-1752

Volume 1 Still Available

Order for $4.00 from the Editor or get one early Convention week in Consignment Sales. Quantities limited !!

CENTERFOLD: Cave of the Winding Stair

Cave of the Winding Stair is located in the Mojave Desert in Southern California. The cave was found by Jack Mitchell in the 1930's and is rich in legends. However, it contains no mummified redhead dwarfs, no boiling springs and does not have 50 miles of passageways. The map was an independent study for a cartography class which Bob Richards took in his senior year at California State, San Bernardino. The black-and-white version of the map was entered in the NSS Cart Salon in 1981, as well as the Salon at the 8th International Congress of Speleology, where it won an Honorable Mention. The color version of the map, produced in 1984, has three screens and two colors.

Editors Note: Due to a printing oversight, 25% of the Compass & Tape issues have black-and-white versions of the map. We regret that everyone can't have a color copy.

TI Calculator Software

Phil Lucas has developed 11 programs which record, reduce, close loops and print cave survey data on TI 58-C and 59 calculators, and the Model 100C printer.

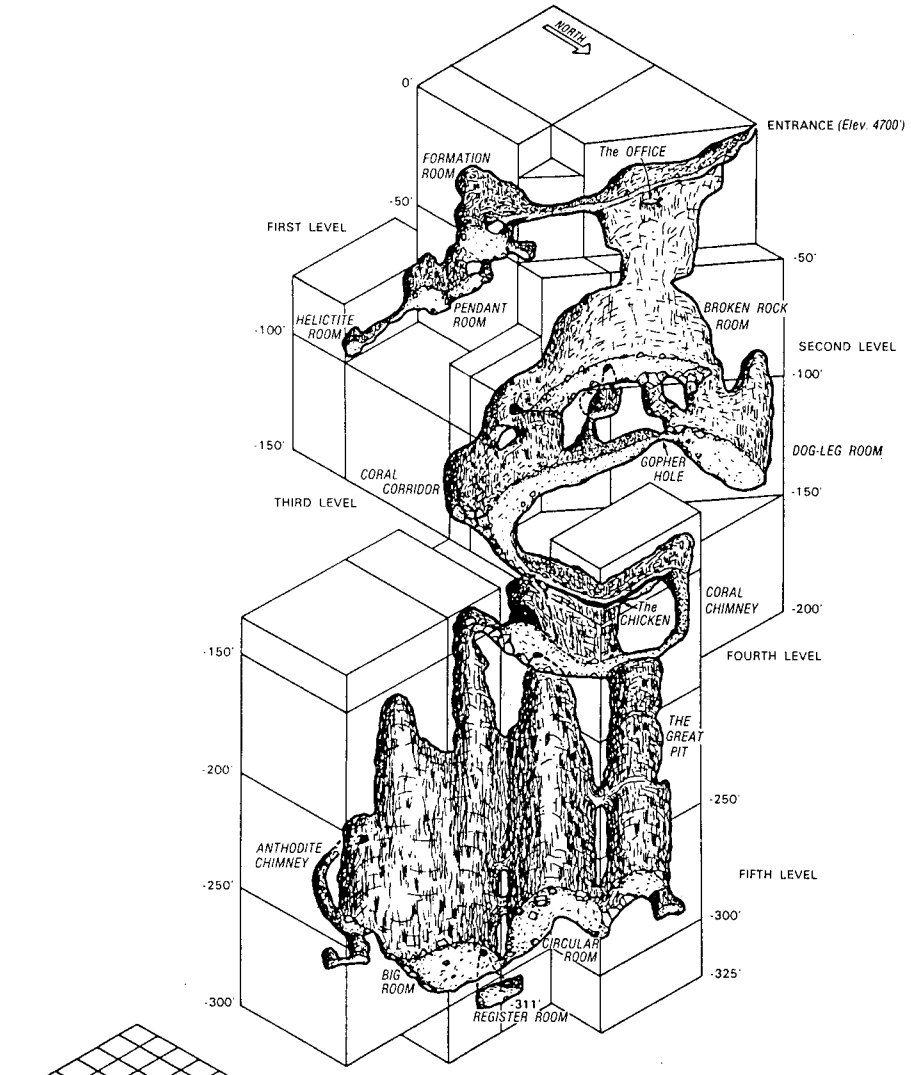
The programs accept measurements in English or Metric units, can convert between the two, accept foresight or backsights, etc. A 65 page article in THE BRASS LIGHT (#8, Sept. 1982) describes the programs and gives complete listings of program lines. Available for $1.00 from Richmond Area Speleological Society (RASS) P.O. Box 7017, Richmond, VA 23221.

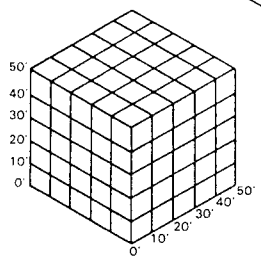
A Systematic Guide to Making Your First Cave Map

Yet another entry in the "This is how you map a cave" genre, this 28 page, heavily-illustrated, cardstock-covered manual is available by mail for $1.00 from John Ganter, RD 3 Box 742, Bedford, PA 15522 or at Consignment Sales, 1985 Convention, WV Old Timers, etc. for 50¢.

CAVE OF THE WINDING STAIR

Providence Mountains SRA
San Bernardino County, California





SCALE in FEET

Block Diagram based on Survey Data by Jay Arnold, July 1971. Southern California Grotto of the National Speleological Society.

The Editor Thanks...

the following people, who contributed or passed along articles, spotted omissions, gave advice, and otherwise supported Compass and Tape. Without you, this newsletter would not exist.

Calvin Alexander
Rick Banning
Lang Brod
Dan Crowl
George Dasher
Mike Dyas
Tyler Groo
Timothy Heaton
Paul Hill
Jim Hixon
Ernst Kastning
Phil Lucas
Hillary Minich
Bill Mixon
Brad Neff
Keith Ortiz
Bob Richards
Bill Storage
Bill Torode
Joe Troester
George Veni
Carol Vesely

Mike Futrell

SACS Session 1985

is going to be a big one. Paul Hill, Session Chair, provides the following partial list of speakers and topics, just before press time, to whet your appetite:

Roger Bartholomew: Suunto Sighting Phenomenon, The Spider Tripod, Correction for Magnetic Declination in Large Cave Surveys over Time, Improvements in Cave Survey Instruments.

Bob Richards: Design, Layout and Printing of Cave Maps

Ray Keeler: Magnetic Anomolies in Arizona Lava Tubes

John Smyre: Color Cave Maps

Carol Vesely: Psychology of Cave Maps

Plus, more papers and a number of short presentations on STATE CAVE SURVEYS. Don't miss it !!!

WEDNESDAY, June 26, 8 am to 12 noon
Luncheon Meeting: Noon to 2 pm

It's not too late to give a paper: contact Paul Hill, SACS Session Chair, 607 South 11th St. Salt Lake City, UT 84102 801-582-4178

CAD/CAM Survey Plotting

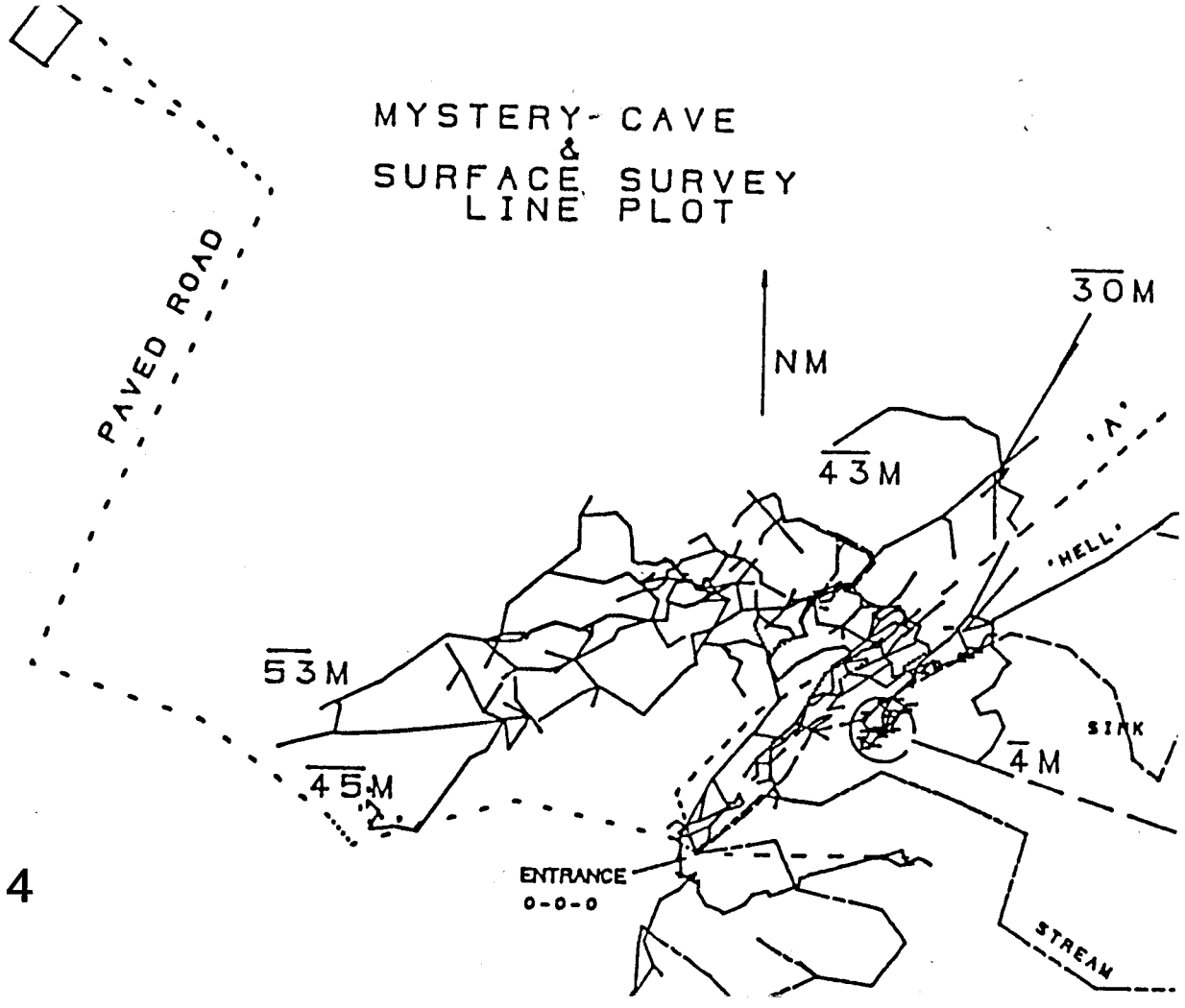
by Bruce F. Jelen

Mystery Cave, also known as Fallbrook, or Surprise Cave, has seen a number of survey attempts. As an aid in the present survey efforts, the Central Connecticut Grotto has used CAD/CAM (Computer-Aided Design/Computer-Aided Manufacturing) or ICG (Interactive Computer Graphics) to plot the map.

The computer program used is called Anvil 4000. This operates on a mainframe computer, being connected to plotters, printers and other output devices. The unique feature of this system is that it is interactive: as survey data is input, the plot appears immediately on the screen for checking. The completed plot can be rotated, enlarged or reduced and otherwise manipulated at will.

Plots can be made of the cave at any time and any reasonable scale. Various plotting media are available, such as plain paper, vellum or mylar. X-Y-Z coordinates can also be printed out if desired. The line weights of the plot can be varied: various typestyles can be created and used also.

(Adapted from THE NORTHEASTERN CAVER, Vol. 15:3, 1984)



Mysterious Terms Explained

In response to my queries ("More Things To Buy", Winter, 1985, p. 71-72), Tyler Groo provides the following definitions:

POUNCE - (from the French Ponce, from the Latin Pumex, pumice)

1) A fine powder, as pulverized cuttlefish bone, formerly used to prevent ink from blotting or to prepare the writing surface of parchment.

2) A fine powder sprinkled over a stencil to make a design, as on cloth.

KOH-I-NOOR - (from Persian Koh-i-nur = mountain of light)

A famous large Indian diamond, now one of the British Crown Jewels.

Reference: Webster's New World Dictionary, 2nd Edition.

Concludes Tyler: "Everyone likes a little tradition in their technology."

Section Treasurer Needed

With our Section membership approaching 170, the time has come to computerize our dues processing/mailing list maintanence chores. If you have a microcomputer and feel motivated to regularly spend time on this important task, please contact the Chairman immediately (814-356-3553) for a job description.

Electronics Section Formed

In late 1984, an Electronics Section of the NSS was formed: judging by SPELEONICS co-editor Frank Reid's premier comments, some of their work may be right down our cave passages. To quote, "We believe that the time has come for 'The People's Cave Radio', which is both high-performance and easily-reproducible." Amen, replies your C&T editor; I look forward to the day when I can charge up the ole cave radio the same way I charge up my electric lamp in preparation for a long weekend of cave surveying, and have more accurate cave surveys as a result. If you'd like to join this Section, send $4.00 to: Joe Giddens, P.O. Box 170274, Arlington, TX 76003.

COMPASS & TAPE
Survey & Cartography Section
of the National Speleological Society
RD 3 Box 742
Bedford, PA 15522

L I B R A R Y R A T E

Non-Profit Scientific Organization
See Section 725.1 of DMM
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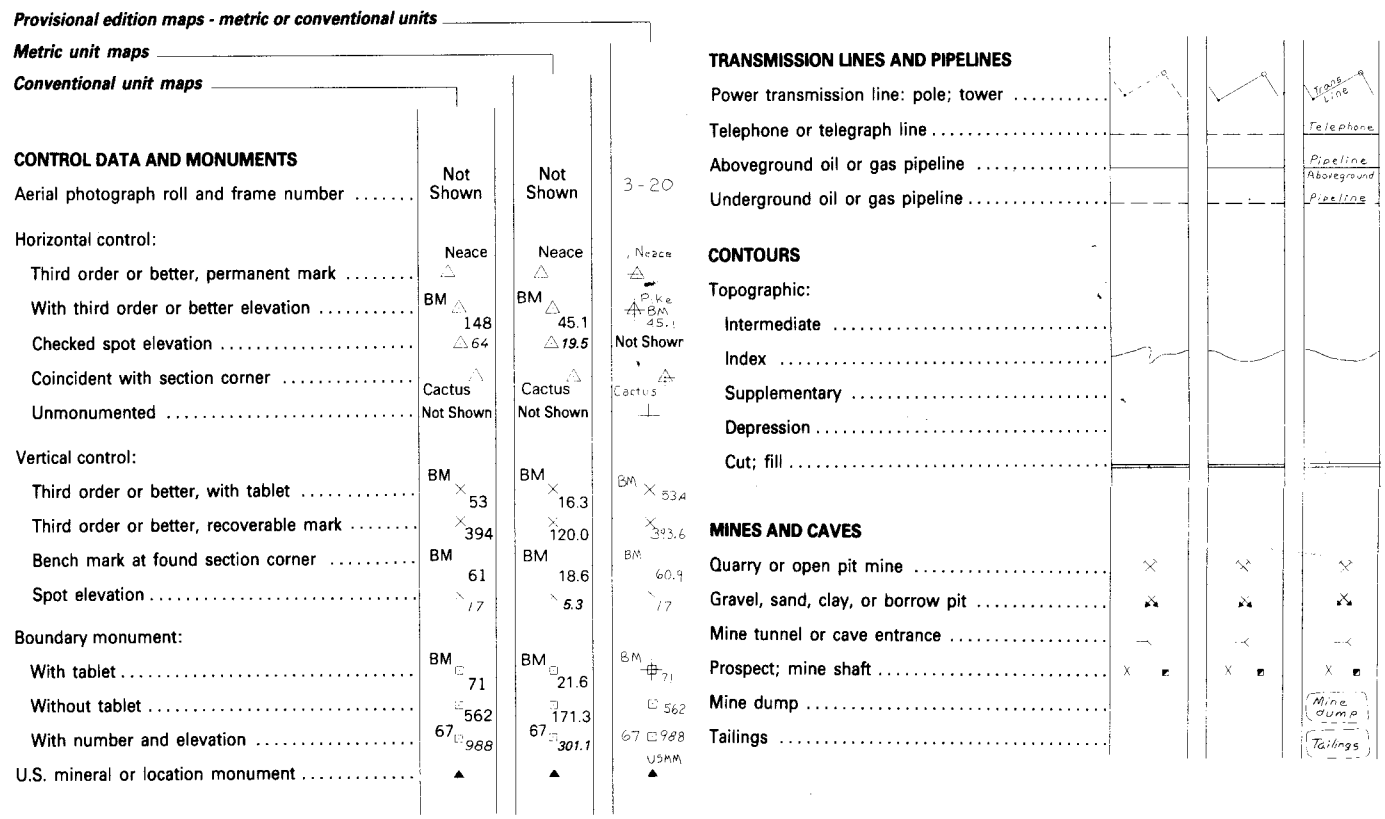

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From TOPOGRAPHIC MAPS, free on request from US Geological Survey,
1200 South Eads St., Arlington, VA 22202.