

user as to the conditions under which the stated accuracy can be obtained. A statement of *C* factor gives but one aspect of the accuracy characteristics of the plotter.

It is a simple matter to state the accuracy of a plotting apparatus in terms of the mean square error of stereoscopic parallax measurements in the plane of the original negative. This value is practically independent of the scale of the negatives and of the *B/H* ratios (cf. statistical study of altimetric accuracy, communication of the French Geographic Institute to The Hague 1948 International Congress). If the instrument accuracy is so stated with reference to the photographic material to be used, be it glass plates or film, it is easy for the user to determine the minimum negative scale required to achieve the specified map altimetric accuracy. In the case of the Type *B* and *C* stereotopographs using plate negatives, the mean square error of stereoscopic parallax measurements in the plane of the negative are from 3 to 4μ and 5μ , respectively.

Yours truly,

E. TORQUEBIAU
Ste. d'Optique & de Mecanique de Haute Precision.
Le Directeur General
125, Boulevard Davont, Paris

NOTE by Publications Committee: The Poivillier plotter *C* factors are based on the mean square error of spot heights read in the instrument, whereas the American practice is to compute the indicated *C* factor from the errors of spot heights interpolated from stereoscopically drawn contours. There is an appreciable disparity between the two types of *C* factors.

SELLING PHOTOGRAMMETRY*

Fowler W. Barker, Secretary, Association of Professional Photogrammetrists

I FEEL humble in talking on this subject when so many men in Government and out have been selling photogrammetry for twice as many years as the months I have been connected with it. In fact, ten months ago I didn't know what the word meant. A group of men in this profession asked me to meet with them. I asked their spokesman what business they were in. When he told me, I didn't know what it was. A few weeks later I attended a meeting in Chicago; none there knew what photogrammetry is. They were men who have influence in setting the budgets of some important industries, which gives a chance to tell a story.

During World War II, there was a manual for new officers. It quoted a German staff officer as saying that there are four kinds of people in the world:—the brilliant and industrious makes the best staff of-

ficer; the brilliant and lazy follows instructions brilliantly and makes a good line officer; the stupid and lazy follows instructions well and makes a fairly good tactician; but the kind to look out for is the stupid and industrious. Since I read that, I have hesitated and tried to think things through before doing anything. I now wish that I had thought and acted to get out of making this speech before so many brilliant and industrious men who know more of the subject than I.

The profession of photogrammetry in my opinion has received more recognition in the past several years than in any period preceding, regardless of duration. But, as the saying goes, we have merely scratched the surface for there are still millions of people who should know about its value and who do not even know what the word means.

* Paper read at the Eighteenth Annual Meeting of the Society, Hotel Shoreham, Washington, D. C., January 9 to 11, 1952.

At this meeting and at the regional meetings, we are really talking to ourselves—exchanging views, increasing knowledge of the subject, improving techniques and advancing technical ideas. That is necessary and valuable but all of us should endeavor to advance the uses of, and appreciation for, photogrammetry more than we have. We should do this in a dignified manner with those persons who are not in the profession.

As President Abrams said in his address at the Business Meeting, perhaps we need something other than photogrammetry, photogrammetrist, photogrammetric and photogrammetrically. And I do not mean to follow the lead of the realtor or mortician. Something truly descriptive that others will readily understand without detailed explanation.

A photogrammetrist participated in a widely viewed television program last fall. The master of ceremonies asked him his business or profession. "I am a photogrammetrist," he said. "What is that?" the MC queried. "I make large scale maps," was the reply. Perhaps there wasn't time for a more detailed reply. But the millions who saw the show gained from the photogrammetrist, who had a golden opportunity, no clear idea of what the profession is.

In addition to the Abrams, Fairchild and Bartlett awards, possibly there should be an award for the person who evolves a new name, a selling name, which will be understood by those with whom we speak on our subject when not talking among ourselves.

I earlier stated that probably the profession has received more recognition in the past three or four years than ever before. That acceptance has been due to several factors—the great need for surveying and mapping and the fact that ground surveyors are in short supply for the large projects now under way.

There are the projects abroad such as the one for Point 4 in Liberia; the large-scale surveys of the Air Force recently let out to private photogrammetrists; the Atomic Energy Commission projects as well as the many highway and Engineer Corps projects; the unusual and little known uses such as the inventorying of stock piles, the use of photogrammetry by large apartment and housing developers, such as near here for the Berkshire, Green-

brier, and Woodner apartments; the railroad recently located, designed, and engineered in Colombia by one of the private members of the profession. The handling of such projects as these and many more by photogrammetry may seem to have been inevitable. The fact is that all of them had to be sold and sold quite aggressively. The man who laid out the apartment houses so artistically from the viewpoint of the surrounding terrain and to save dollars on excavation and fill didn't call on the photogrammetrists. He read one of those excellent, dignified advertisements in *Fortune* magazine. The advertiser didn't get the job, but another local photogrammetrist who was on the spot. The power company didn't have its coal pile inventoried, by chance; it was called upon by a member of the profession.

Some may wonder how, if we are a profession as the name of our association implies—and we intended it to imply—we can advertise and have salesmen. Possibly if we had another name than photogrammetry we would not need to use those devices which are certainly essential now to the very survival of the private practitioners.

Cooperative salesmanship is the least costly and in some respects the most effective in broadening the market, but not, of course, in signing clients on the line. The public relations program of the American Medical Association, of which you are all aware because of its aggressiveness in behalf of a most distinguished profession, is an example of cooperative selling.

We have tried some of that for photogrammetry in a small way, and believe that it may have helped to spread an understanding of our subject. When first on the job we wrote to such as the Secretary of Commerce; the Undersecretary of State, the late Dr. Bennett; the Director of the Budget; and the head of ECA. An enclosure explained briefly about photogrammetry and the letters mentioned men in their organizations who were expert on the subject. Copies of the letters and enclosures went to the officials mentioned and others in the agencies who we believed didn't know much, or anything, of the subject, but who should. The responses to these letters were, to coin a cliché, beyond mediocre. We received phone calls from persons in the agencies, to whom the let-

ters or copies were not addressed but to whom they had been routed, asking questions on our subject. I feel this has helped directly or indirectly almost every person at this meeting.

Then we expanded the enclosure to a brochure, sending our manuscript for the help and comment of many of you. Most replies were of a cursory nature. "Excellent presentation." "Should do a lot of good," were typical but not helpful comments.

Robert Randall and Gerald FitzGerald were of constructive help. Copies of the brochure are at the registration desk if you're interested. Give one to a friend who doesn't know what you do. We had to publish it in a hurry to meet a request from the Boy Scouts of America which wanted information on our subject for a meeting of more than a thousand scout executives. Members sent the brochure to embassies, highway departments and other prospective clients. We have had many calls and letters as a result. One highway department asked for 100 copies to send to field personnel; another 30 copies. We mailed it with a covering letter to all Engineer Corps offices and received a 28 per cent spontaneous, voluntary response. We are now mailing it to university and college libraries and to faculty members teaching civil engineering. Maryland University asked for a hundred copies, as did Rensselaer Polytechnic; University of California at Los Angeles asked for 30; University of North Carolina 20; Michigan College of Mining and Technology 20; and West Virginia University 12.

The covering letters contained these sentences.

"In the preparation of the attached we have had the assistance of many experts, both in the field of private photogrammetry, which this organization represents, and in Government."

"For all we know, it is the first presentation ever made on our subject for potential map users who know something of the value of photogrammetry but are confused by the plethora of claims and counter claims as to its value."

One professor of civil engineering asked to be taken off our mailing list. I was hurt, thinking he didn't consider us a profession and that the letter and brochure were undignified. He replied to my letter asking why we had offended him, stating he had

been in civil engineering for 48 years, had retired and had not meant to be discourteous.

The American Trade Association Executives' journal had an editorial "Do You Know What Photogrammetry Is?," based on the brochure, and sent copies to all members. As a result a representative of the National Society of Professional Engineers called on us for information for an article on photogrammetry to appear in *American Engineering*. King Features is syndicating a picture story based on the brochure.

But the *piece de resistance* are the editorials which have appeared in hundreds of non-metropolitan newspapers, based on an article written and disseminated to newspapers by a friend who asked about my new job and to whom, in response, I gave a copy of the brochure. I'll read the editorial:

AS OLD AS CIVILIZATION

"Map making is as old as civilization. The whole history of the world, from the early explorations to the development of our great modern cities, has been heavily influenced by the work of cartographers.

"Today maps affect, in one way or another, almost every activity of mankind. And the science of map making has made vast progress in recent years, due to aerial photography. One of the most interesting developments is photogrammetry, which is defined as the science or art of obtaining reliable measurements by means of photography. This concept is not new—a Frenchman experimented with it a century ago, and 50 years ago a Canadian did the first work of practical importance. Now photogrammetry has been brought to a high state of perfection. Complex machines are used to plot the aerial photographs. These machines work on the principle of the old-fashioned parlor stereopticon but with the precision of military range finders.

"A number of photogrammetric engineering firms are in business today. Their work consists of determining the best locations for highways, railroads and transmission lines; resources surveying of soil, forests, dam sites and minerals; city planning; plant location and assisting the government in expediting the huge job of accurately mapping the nation. The cost is

often remarkably low—as little as \$1.00 an acre for complete and highly accurate map studies.

“The story of the map will never end. There are always new chapters to be written.”

I have some of the clippings here: Warren, Ohio; Wilmington, California and the *Enterprise-Journal* of Providence, Kentucky; from at least 500 newspapers, mainly county seat weeklies and non-metropolitan newspapers, though a Brooklyn, New York daily, a tabloid, published it under its mast head.

I will mention another point which has a bearing on my subject of selling, keeping in mind that we should guard against overselling.

A government man who finds a way of working harmoniously, efficiently and economically with private contractors in building up that side of the profession soundly—not doling out benefits on a golden ladle—can get a lot of personal satisfaction out of such activity. It may at times be a difficult job—but worthwhile, and he can be proud of that accomplishment.

For many years I was in the airline business and there, during World War II, we found men in Government who wanted to take over and operate airlines themselves—in the public interest, they felt. Also, they believed it would be much easier administratively and less costly to the taxpayer.

Our position was that the Government had enough to do without taking over that specialty. We sold the Army on contract-

ing out to the airlines to do the main part of the air transport job in World War II. An anomaly was that some of the air transport executives who became generals and colonels were tougher on us and were more vehement about “taking us over” than the regular military men. Some regulars complained about civilians flying through the overseas bases which they commanded. However, when they wanted to go some place they chose to fly with a civilian crew. I believe this airlines situation to be somewhat—only somewhat—comparable to mapping.

In that formidable document, Volume I of “A Water Policy of the American People,” which is part of the report of the President’s Water Resources Policy Commission submitted to the White House on December 11, 1950, it states “‘Planning’ in the American sense means planning to maintain and strengthen free competition.” This quotation, I realize, is out of context, and you may wonder if this applies to you. In this regard the head of a prominent governmental map making agency wrote us on July 26, 1951 in part as follows: “This organization recognizes the importance of commercial facilities in this field and will continue to encourage their development and improvement.”

In closing I wish to emphasize two subjects: (1) the increased acceptance of photogrammetry in the past several years and what we are doing to enhance this; and (2) the need for us not only to “talk to ourselves” plus another subject of importance.