

a considerable amount of space, and we have started to make arrangements to allocate that space as early as possible.

Beginning in October we began to assemble and compile a list of all of the leading manufacturers of photogrammetric equipment, both foreign and domestic, and various essential mapping materials, as well as the various commercial mapping organizations throughout the world. We have now sent letters inviting all these organizations to exhibit. Our response to date has been rather gratifying.

Approximately 60 per cent of the available space has been allocated. We still need replies from many U. S. firms, and we would appreciate receiving those as early as possible, so that we can complete our allocation of space.

At present we plan to utilize the main ballroom, the bird cage walk, and the west ballroom, for commercial exhibits.

The Government exhibits, for the various mapping agencies throughout the world, and the exhibits for the various commissions of the Congress, will be placed in the various approaches to these rooms.

Mr. Fischer, of the U.S.G.S., Mr. Woo of E.R.D.L., and Mr. Bauer, of A.M.S., are serving on the Committee with me. All of us will be at this meeting with charts, and we will be glad to see any representatives of the domestic organizations who wish to arrange for space.

THE OPPORTUNITIES AND OBLIGATIONS OF PHOTOGRAMMETRY AS A PROFESSION*

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ONE of the fundamental rules of our present civilization is that with opportunities, and the successes which are always possible as a result of those opportunities, there must be very definite responsibilities—responsibilities to the profession as such, as well as responsibilities to the civilization of which the profession is an integral part.

No doubt many of you have heard statements, at increasing frequency during recent years, to the effect that the days of opportunity for this country and its citizens are over because there are no longer large frontier areas available for exploration, settlement and development. There are a number of people who due to their individual characteristics accept this thesis with an attitude of resignation, acquiescing in the inevitability of the premise that the future, from the standpoint of the young people of this country, is becoming increasingly limited in its opportunities. This is an all too common attitude which has been with us and our forebears since the beginning of civilization as it is recorded. There are those who are always only too willing to interpret existing circumstances as indicating that no future progress is possible, and that the only decorous and conservative course open to them is to "sit and wait." The amazing thing, however, with the history of civilization and mankind is that while there is always a group or segment of greater or lesser proportions "sitting and waiting" for what they consider the inevitable, there are also, and always have been, certain free and indomitable spirits who refuse to accept the thesis of *no further progress possible*.

The fact that you or I, or a number of us collectively, have not been able to

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accomplish some particular objective which we agree is desirable and essential does not necessarily mean, as history has proven, time and again, that this desirable or essential effort will not eventually be accomplished, when the thought and effort devoted to its accomplishment are sufficient for the purpose.

There seems to have grown up increasingly in the past few years a general feeling of uncertainty which is well represented by this fear of the future. This applies not only to international relations, to various political ideologies which spring up from time to time and then fade away to be replaced by new or some old recurrence of a previous manifestation, but it also involves each of us more intimately in our every day life in the field of activity, or life's work, which we call our profession.

It is probably true that no occupant of the White House or outstanding leader of our country has ever completed a term of office or tour of duty during which the same problem did not arise to confront him. Perhaps we might go further and say that no leader of our people who has achieved immortality in our country's history has ever done so without more than the usual amount of this fear or lack of confidence hindering and delaying his efforts.

Perhaps if we would look through, and study carefully, the histories of our great men, in politics, science and education, we would find that without exception from the time of Washington up to the present date, leaders have always had to combat this fear of lack of opportunity, fear of failure of achievement, and fear of accomplishing too much in the mistaken belief that in so doing they are impairing their personal economic security.

Not so long ago an occupant of our White House made the statement that "we have nothing to fear save fear itself." This statement is true and it epitomizes in phrasing what countless numbers of other leaders have attempted to convey to their citizens or members of their organizations through the centuries. I doubt very much that a feeling of optimism was present among all of the various individuals who made up the rather bedraggled assemblage at Valley Forge. The majority of individuals are pessimists in the true sense of the word. It is much easier to be a pessimist—it requires less effort and thought, and following the path of least resistance, many people are quick to seize on the pessimistic attitude as possibly an excuse for their own lack of initiative. You have witnessed this phenomenon many times—having been presented with a new idea the individual makes the supreme effort coming up out of a semi-comatose state ponderously says "It can't be done," and then relapses again to a state of mental inertness.

Now what does this have to do with the title of this paper—what relationship is there between what I have just said, and photogrammetry and its practice as a profession? There are many here whose livelihood is involved at the moment with the practice of this, our profession.

Our nation has become very "security" conscious in the past few years, and in using the term "security" I refer to individual economic status. In this particular instance, however, a situation develops where due to the intimate relationship between individual economic security and our professional work, there is a tendency to become more and more conservative. Such conservatism may be deadly and will not only impede but may stop progress altogether. The success and place in the world which this country has achieved has not been obtained by those who "sit and wait."

To achieve new ideas, new programs, new techniques and devices requires minds which are not content with existing methods of accomplishing or achieving technical or scientific results and—equally important—are willing to try to do something about it. In any civilization we must have a blend of characteris-

tics, just as in the early days of this country. Once the thirteen colonies had been established there were those who left the relative security of the Eastern settlements with their established economic and social patterns and set forth out to what was then our frontier with no guarantee of security, no guarantee of old age pensions, no guarantee of even life itself. They were willing to risk what they had in the effort, in most cases, to improve their own status. But in doing that they collectively formed an increasingly growing group whose efforts resulted in extending this country from the Atlantic to the Pacific as we know it today. Many of these pioneer people were ridiculed and condemned by their associates and relatives for leaving the comparative security of the Eastern settlements. They still had, however, faith in *themselves* and in their ability to overcome the difficulties and hardships which lay ahead.

Today our land frontiers are well established. There are no longer huge areas of wilderness available for the settler who is filled with the spirit of adventure and pioneering. On the other hand, a change has taken place which must be carefully considered.

In the earliest time of our nation education was recognized by those early pioneers as an essential component of life in this young nation. Perhaps an all-seeing Providence directed that this should be so. As the large areas of land diminished, the background of education in the professions, arts and sciences increased. Today we have many frontiers that never existed or were even dreamed of in the past, and today due to the educational facilities which our forefathers saw fit to initiate and emphasize in the building up of this country, we are now prepared to explore these new frontiers. Every development of science, every new technique, every new piece of equipment does not spell the completion of an effort but simply additional means at our disposal for still further improving it, and expanding upon present knowledge.

Whereas some years back research was a field left to a few individuals whom circumstances and the times coupled with their own peculiar adaptability and pioneering instincts caused to search out the unknown in theory and practice, today we have, as a result of our educational plants, our universities and colleges, hundreds, perhaps thousands, of young men and women being added each year to the group of new pioneers striving to break down the unknown, to do tomorrow what is today impossible, to create new products out of existing materials in ever-increasing numbers, and then still not satisfied to create additional materials.

Whereas probably fifty years ago research efforts as we know them today would have been limited to just a few individuals and organizations, today that situation no longer obtains. No large organization or successful corporation can long endure or exist without a constant seeking for betterment and improvement. Research must follow a two component approach—on one hand every effort must be made to bring to its full development that which we already have available to us by constant improvement both in instruments and techniques. This approach, however, is not sufficient in itself, and if employed solely, must result inevitably in failure. Along with this effort, which is essential, must go the other component of the research effort which is constantly going back to basic facts, studying, analyzing, evaluating and attempting to come forth with entirely new methods or procedures including the necessary instruments or equipment which will permit a specific task to be accomplished with the least expenditure of time, effort and funds. Too often the research efforts of certain organizations become side-tracked on just one of these two activities with the result that over-all progress is jeopardized.

If we should devote ourselves entirely, to the exclusion of all else, to the de-

velopment and improvement of what already exists that in itself is very fine as far as it goes, but we would soon find that it did not go far enough. If, on the other hand, we would not concern ourselves at all with the improvement of existing techniques and equipment, but spent all our time and energies in attempting to find new answers, we would probably find intervals of our scientific and technical history when the over-all progress would be comparatively slow. It is further important that these two divisions of research be exploited simultaneously because invariably each contributes to the other. An improvement on something which has already existed may be the key which permits some mind to envision and create an entirely new approach to the problem. On the other hand, many new devices and techniques have themselves suggested improvements on existing techniques and equipment.

We have one common enemy within ourselves which we as individuals and as a society must always actively combat. It is a very human tendency. How often have we seen an individual or organization bring forth an improvement or perhaps a new device worthy of widespread approval and approbation, and how often have we seen these same people responsible for this improvement or device, instead of going on from there, erect a defensive framework, or in military parlance "dig in" to defend this new or improved device from all comers. The true research attitude must constantly exemplify the fact that nothing is ever perfect—that as soon as an instrument, technique or procedure, has been developed, better than anything that we have had before and released to the production portion of our profession, those individuals who have just completed what may have been long and strenuous effort to accomplish the result, *at once* set to work to make their latest creation obsolete as soon as possible. These things take time. Production organizations should have available at the earliest possible moment the latest, most improved, newest devices to assist them in their efforts. Research organizations having once delivered over to production the latest, should constantly be working to create the new improvement which will accomplish much more than the last.

We are building within this profession a new type of pioneer—persons who will not admit defeat even though they have tried for many years to achieve certain results with certain materials and techniques. These minds in this profession of ours for the most part are members of this Society. This new frontier of science does not require the same physical attributes required of those who succeeded in what we might term our land pioneering. The mental characteristics and attributes, however, remain unchanged. There must be dogged determination, initiative and recognition of creative ability and a continuing urge and willingness to undergo not so much physical hardship as long, continuous hours in attempting to solve the problems for which as of now we have no solution. It might well be said that there is no timeclock possible in a research organization. The true scientist or research worker does not and cannot turn on his mind at eight o'clock in the morning and turn it off at five in the evening. This results in a peculiar kind of individual, and as a result there will probably be a new name, comparable to the term "golf widow," spring up as it already has in some parts of the country to describe these workers in science who become so engrossed in their efforts that all other matters become for the moment relatively unimportant.

What then is the obligation of the Society to the members of its profession? Certainly to constantly hold high the standards and objectives of creative research and attempt to insure its continued forward progress. Through its publications and at its meetings, to constantly combat the futile attitude of "sit and

wait." By its approbation and encouragement, to keep alive the determination to accomplish in the minds and spirits of those of its members who are seeking to create the techniques and methods for a more glorious era in our profession; to clarify, and to prevent as much as possible, confusion in understanding the products of our research laboratories; to refuse to accept any developments, startling or wonderful as they may be, as the final result but only as another step in the right direction and additional incentive for further improvement.

The opportunities which exist within our profession of photogrammetry are many. Speaking as one concerned with research—not critically and not criticizing any individual or group of individuals or organizations—photogrammetry today is not keeping up with the rate of progress that is needed for it to accomplish the many things which it should do from the standpoint of economic development of our country, the conservation of our natural resources, and national defense. We must improve, and as rapidly as possible. We must devise means which will permit us to make 2, 3, 4, or 5, or even 10 or 100 times as many maps as our budgets and personnel with existing equipment now limit us to. From the scientific standpoint, we must not think of production in terms of numbers or pieces of equipment and hundreds or thousands of dollars. We must try to devise new procedures, new equipment, new techniques which will permit us to accomplish more of equal or greater accuracy, with equal or less expenditure of funds.

The American Society of Photogrammetry has contributed materially to the progress of photogrammetry in this country. It is very difficult to say what might be the situation today if far-seeing individuals had not created this organization some years ago. But again, that is not enough. The organization must become a live, vital influence, not by interference or attempting to dictate the direction of scientific or technical development, but rather in attempting to encourage *all sensible efforts to improve, to create and to thus accomplish*. This, then, is the challenge with which we are confronted. We must go on. We must not attempt to live in the glory of things which have been done. We must attempt to create new and better ways and in so doing keep our profession alive, virile and progressive.

Whether we do this or not depends upon each of you as individuals. Your professional society is made up of many individuals like you and represents your thinking and attitudes. It is to be hoped, with no disrespect or lack of regard for the fine work that has been done by the Society in years past, that the future of this profession, and the Society representing it, must and will surpass anything that it has yet achieved. The answer is in your hands.

NEWS NOTE

NEWS RELEASE FOR W. & L. E. GURLEY

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