

of usefulness in large scale photogrammetric surveying. The advantages and value of such large scale surveys are only just beginning to be appreciated in the United States. It is notable that the best mapped countries in Europe are the very ones that are spending the largest sums, relatively, in still better, larger scale surveys with definite provision for keeping revisions current. It is clearly evident that the better the maps, the easier it is to sell them. This is profoundly encouraging to photogrammetrists for we have in our science the most economical and efficient means of making the better maps.

OBSERVATIONS ON AN AROUND-THE-WORLD TRIP*

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SINCE I have just finished a trip around the world, I have been asked to give you some briefs on what happens when you make such a trip, what you do, what it means to you in the future and what it means to you people here.

Individual people here could go on a trip around the world, and would see quite different things from what I would see; almost anybody in any other kind of work, if on a similar trip, would see an entirely different group of things.

If a tourist, and on a trip around the world, you would pretty much see the spas and the beaches and the sights of interest which everybody talks about. I did not get to see all of those; I sent my wife on those expeditions. She brought back a story of where all the beautiful points of interest are, and if you want to talk about any of them, I think I will be able to talk about them just as well as if I had gone there.

What I was mainly interested in was the mapping activities and the places where this kind of work is going on. I wanted to see the factories; the armies and navies of the different countries, and what they were all doing. Then I wanted to take the whole thing and bunch it together, when I got home, and try to make a little five-year plan of our own, which we might be able to work out. I also desired to take the same information and pass it on to our friends in industry and business and government, wherever they might be, so that they also could gain by it.

I did that as best I could. Yesterday Capt. Reading pretty much covered Europe as far as photogrammetric work goes. He gave you a very good story. However, he saw it from the governmental angle and what was being done in government agencies, what they were doing in commercial companies, and how the government might be able to use it.

I saw it in quite a different way. I saw the socialization of Europe, England, and the Far East, and that is a story which is of importance to all you people.

If you were an educator and went around the world, or even if you were a student, you would try to figure out how there could be some sort of universal language so that you could better understand and learn. If a financier, you would think in terms of one universal currency which could be used by everybody; you would see the black market in money and start wondering where it all led to. If in aviation, you would see all of the bad weather, all of the good weather, all the airports we have built and paid for around the world; and you would see how they are being used by other people.

In our particular line of work, I was mainly interested in factories where

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instruments are being built and how they go about building them with the kind of equipment they have available.

An American is rather an unusual sort of fellow in that it does not make any difference where you set him down; he begins to figure out some way of building a little empire around himself.

I could take any group of people around any table here, and set it down in the center of any of the other countries around the world; and, if I could properly supervise the individuals, give them needed inspiration, and provide the required money, then they would go ahead and be in photogrammetric work.

Invariably, if you people were dropped down in almost any part of the world, you would begin to think in the same terms as you do here. You would not adopt the customs of those countries very well.

If you were a Government person, you would think in terms of how the Government would do it there, of the need for a Government operation, and in terms of how aerial photographs and maps are needed. Then you would think in terms of how the Government would go about satisfying that need; where the money would come from, and the like. Then you would set up an organization, and you would go ahead and do the work; then you would *Give it Away*.

If a commercial operator, you would do quite the opposite. You would take one look around; you would see where the need would be for this type of work; you would try to figure out somebody who could pay for it; then you would try to find how you could do it cheaper than anybody else, do it better, and still make a profit.

That is the difference between the thinking of different people as you go around the world.

I was very much impressed by all the things which control the economy of all these countries, and I think I was more impressed by the many wars which are going on around the world than anything else. These are wars you hardly hear about. You are told when they start; sometimes you learn when they are over, but you do not follow the day-to-day activity of those wars very well in our newspapers, because the details are pretty much pushed out by the day-to-day information close to home in which you are more interested.

I will just cite some of these wars you run into, because they definitely control what is going to happen here in the United States in the next few years.

Actually, when you start around the world, you think you are going to go where you want to and when you want to. Actually, I finally ended up in going, *Just around Russia*.

That may sound rather funny to you, but that is exactly what happens. You get across the North Atlantic; you go on through into Germany, and you come up against the Iron Curtain. They say, "Son, you have gone far enough; you cannot go any farther in this direction." So you back off.

You get on down into Greece, and you try to get up through that frontier, but the guerrilla fighting is going on, so you cannot go any farther.

Then you continue on your trip and you find that a war is going on in Israeli and the Arab States. You get on over into India, and you find a war going on which is known as the Partitioning of India. It is a terrible thing when religion divides a country.

You cross the Burma frontier, and you find a war going on between Burma and Siam. And in the Philippines, there are two wars going on all the time: there is the war for the economy of the Philippines; then there is the economic war in the north, which is a local fight, known as the Huck War. There are Japs in the

southern part of the Philippines, who have never come out of hiding. They make raids on the country from time to time.

We move on into China, and there are the Communists on the north. We went as far north as Peiping, which at that time was surrounded. We flew in and we flew out in a thriller. If you had seen us in an old C-46 air freighter, Mrs. Abrams and I sitting on a couple of crates, with forty Chinamen, twelve kids, and 10,000 pounds of freight, you would have said, "Ted has not learned much of flying in the last thirty-two years, or he would not let himself get into such a mess."

We were evacuated, along with the rich Chinese, from North China, brought down to Nanking, Tientsin, and Tsingtao, and back into Shanghai.

As we moved to Japan, we found a war going on in north Korea; then you come back home and you find there has been somewhat of a revolution in the United States since you left.

Another matter of interest is the occupations which we have in Germany and in Japan. In those two countries, the occupation forces are carrying on as best they can. They are trying to do things which will put those countries back into production; they are endeavoring to reduce the cost of the occupation and, in so doing, they are getting the factories in operation again; they are equipping them; they are securing their materials; and they are getting them to make things which they made before, in general; and now they are going to be in competition with the United States manufacturers around the world.

That is a very serious situation, and I want to illustrate it by these little cameras I have before me. Some came from Tokio; some from Switzerland; some from Germany and some from the Russian frontier. They were made by the people in those countries, and they are beautiful pieces of workmanship.

I will hold them up so you can see them.

This little camera cost \$1.50. It is a complete camera; it uses 16-mm. film, and it is a beautiful piece of workmanship.

This camera is a exact duplicate of the Leica Camera; part for part, it is interchangeable. It was made in Japan, and the cost, established by the American Occupation Forces in Japan is one-tenth of what the retail price is here in the United States.

Think of that and what it means to us.

Here is another little camera. It is a little bit larger than a quarter and has a view finder on top. This little ribbon is provided so you can hold it. It takes six pictures on a little disc of film, which is the size of a quarter. The people in Japan who made it were graduates of the University of Tokio in a school which was known as the school of camera design. As far as I know, we do not have any school in the United States which can be called a school of camera design, in any of our universities; but they had such a course there and, as a result, they went ahead and developed these little cameras, and many more.

The interesting thing about this, is the economics. If the United States Government were to give me an experimental engineering contract to make a similar camera, paying the wages we have to pay, I would be lucky to do it for ten or fifteen thousand dollars. I cannot do it for less. I believe there is nobody else in the United States who could do it for any less. Oh, here and there, you might cut it a little bit, but, in general, that is true.

The Japs will take any little camera I want built, a small camera like this or any other kind of mechanical device which might be similar. They will take a contract from me, for an experimental engineering project. They would design it; they would engineer it; they would tool up; they would put it into production;

and they would not deliver me one, but 1,000 at a price of \$1.50 apiece, or a total budget of \$1,500.00.

I cannot even get it out of my front office for \$1,500.

You people here have to take a very definite interest in foreign affairs. My recommendation is, that each of you do exactly what I have done; get on your horse and go for a ride around the World.

I would like to tell you a little bit about the economics of a trip around the world. The other day I saw an advertisement by Cook's that they had a tour around the world; they are just getting these tours under way again. You can go to nineteen ports of call around the world, and it takes 100 days.

You know how those Cook's tours generally go. You start out in New York; you go by boat for three or four days; you arrive in Havana, you have a half day there; you go on to Panama; you have another day; you go up to San Francisco, you have another day; then you go on out to Honolulu and you have another day ashore; then you go another week out across the Pacific and you arrive in the Philippines. And so it is, on around the world.

On a tour by boat you get nineteen days of sight-seeing and eighty-one days of riding on a boat. If you go by airplane, you can go to the same nineteen ports; you would be flying a very small part of those nineteen days, and you would have eighty-one days for business, or however you want to use it.

So that is the difference between flying and going on a boat.

It would have been impossible before the war to have made a trip like I just completed, but today it is very practical. We practically knew from the minute we left home where we were going and what time we would get there, and we were only a few minutes off at any point.

You people can do it; it is not an expensive trip. It is something which many people have done. Too often we are apt to go out, do a job some place, and turn around and come back. Only by going all the way around and seeing one country after the other and being able to get out and make comparisons can you get a good story of what is going on in the world.

It has been my privilege to go to fifty-eight of the countries. I have enjoyed each and every one of them very, very much, but I am always glad to get back to the United States and home.

"EXPLORER" NOW IN SMITHSONIAN MUSEUM

Mr. Abrams has officially announced that his airplane, the "Explorer," has been delivered to the Smithsonian Institution. That organization will eventually display the "Explorer" in its National Air Museum. Smithsonian officials declare that the "Explorer," as the forerunner of a type of airplane designed specifically for aerial mapping and survey work, will be an important addition to the institution's records of aeronautical progress.

The "Explorer" was developed by Abrams engineers during the middle thirties, because no aircraft in production at that time was believed to meet the exacting requirements imposed by the rapidly developing aerial survey industry. With a cruising speed of 180 miles per hour, top speed of 212, 1,500 feet per minute rate of climb, and a high degree of inherent stability, she outperformed most aircraft of equal horsepower, according to engineers and the men who flew her.

The unusual glassed-in nose, tricycle landing gear, pusher motor and twin-boom tail made the ship the center of attraction at aircraft shows, air meets, and operational bases during its years of operation, 1938 through 1942.