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## Key Address on Space-Age Industry Requirements

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RICHARD L. SHETLER

Richard L. Shetler joined General Electric's engineering training program following his graduation from Ohio University in 1943. In 1957, Mr. Shetler was appointed Manager of the newly formed Missile Guidance Section for design and production of the Atlas ICBM guidance, and in 1958 he was named General Manager of the Defense Systems Department when it was established. He has just recently been named General Manager of the new Command Systems Division.

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SPACE AGE INDUSTRY REQUIREMENTS

Site selection decisions certainly must be classified among the most common decisions made. Every time a family selects a new home another site selection decision has been made and the process used closely parallels that used in selecting an industrial site with one major difference. The wife (I'll speak for myself) dictates the criteria based on intuition and many other nonscientific factors and a home site is selected which satisfies these criteria. The development of criteria for industrial sites is normally more of a team effort and hopefully more scientific.

Not all the credit for upgrading the site selection process can be given the large industrial organizations or the consulting firms. The heart of American business, the commercial segment of our economy, has done an outstanding job developing scientific approaches to site selections. The motivation to do an outstanding job of site selection is obvious, profit or lack of profit will have an earlier and more profound impact on small business.

Industrial site selection is a responsibility of management and in making site selection decisions a much broader information base is utilized than is available to the individual site selection specialist. All the work is done to give management better information on which to base a decision, yet no amount of detailed work and no amount of refinement of the site selection process will replace the need for ultimate management decisions.

The organization with a site selection problem has already made the expensive decision to locate or relocate a business. Those with site selection responsibility can now influence a series of secondary, but important, decisions. Their recommendations will influence where the money is going to be spent, to some degree the short and long range return on plant investment, and perhaps to the degree of success of the new enterprise and its people. Site selection is actually a two-step process. The first being selecting a location and the second being the selection of a plant site.

The Defense Systems Dept. of General Electric recently had an interesting site selection project which culminated in the selection of Oklahoma City as a new plant location and a site west of town as the plant site. I will use this project as an example to infer to you the depth and breadth of the space industry requirements.

The General Electric Company is a decentralized business entity which places profit and loss responsibility on each of over 110 product departments. It supports these varied businesses with a staff of functional experts in several services components. In any major undertaking similar to the one I will describe a careful blending of Product Dept. and these service component resources is required.

The Defense Systems Dept. of the Command Systems Division is one of these 110 product departments. They are a major supplier of military electronics systems and have been accorded world-wide acclaim for equipment which was used to guide John Glenn, Scott Carpenter and Walter Schirra into orbit on their space flights. This department has 6,500 employees in several geographic locations around the world. It has headquarters in Syracuse, N. Y., where it employs approximately 4,500 persons.

A necessary, important, continuing activity in their business is the submission of proposals to the various military and NASA customers .... included in any significant proposal is a facilities plan which encompasses a description of the facilities required to do the job and the plan for acquiring these facilities, if not already available.

Our efforts which ultimately led us to Oklahoma City started three and one half years earlier when at approximately the same time, three seemingly unrelated trends were observed which were:

-Our business was requiring us to establish small organization components throughout the U.S. and overseas in order to accomplish our contractual obligations. This alone necessitated the initiation of a more formal approach to site selections.

-Experience on submitting proposals showed that at some point, the defense oriented portions of the General Electric Company would need additional facilities in order to remain competitive in the aerospace age.

-Range optimum employment levels in Syracuse, N.Y. indicated that efforts should be initiated to maintain current levels but that additional growth should be accomplished elsewhere.

The summation of these three facts indicated the desirability of planning the establishment of business components at points geographically remote from Syracuse, N. Y.

I explained the origin of our site selection problem to make one specific and important point. Business location or relocation problems just don't happen, they are caused. The reason, though not always obvious, can be recognized, studied and in most cases influenced. Some are obvious but others, like a concern for a single company's desire for geographic balance in employment levels, are not so obvious. We formalize a look at these reasons for locating or relocating a business into a "causitive factors study". This study is not a one shot effort, it is a continuing study, updated in our judgment, must be a part of the business planning effort in any organization.

When given the go ahead to plan for the establishment of a business at a geographically remote location, we first define and determine the needs of the business to be located. To do this we first studied the departments in our Defense Electronics Division and discovered that though each had separate product scope, separate suppliers, and therefore, separate requirements, there were a great many similarities particularly on those points that would affect community selection.

We then made the assumption that any new organizational components of the division would be similar enough to this one department so that we could use existing event requirements in planning for new locations.

Having made this assumption we then accomplished a "business profile study", which defined important characteristics of the Defense Systems Dept., and thus the prospective new department.

Such a study goes into depth in describing the business; for instance, you get answers to these types of questions.

How many truck shipments enter and leave your plant each day?

How many air and rail shipments enter and leave your plant each day?

How many job classifications exist?

How many employees are enrolled in local colleges or universities?

Where is your customer located?

Where are your suppliers located?

What is the rate of usage and annual cost of utilities used in the plant?

How many services are now purchased from other company departments in the present area that would have to be duplicated at a new location?

What are the travel habits of the organization?

From the results of this study we developed location criteria and site criteria for our business. Location criteria included:

-Community should have a minimum population of 250,000.

-Major technical university within 25 miles. I will digress here for a moment to explore this last point a little more fully as related to Florida. The Central East Coast area of Florida must realize right now that it should do everything it can to attract an institution of higher technical learning. Florida is in a unique position to achieve ever-increasing social and economic greatness in the aerospace age. In order to obtain this destiny of greatness Florida must attract - and be attractive to new aerospace industries. Such industries are attracted to areas having an outstanding system of higher education and research, particularly relating to science and technology.

At the present time no such institution is located in the Cape Canaveral-Daytona Beach area and this is a void that demands our immediate attention.

This problem is further compounded by the fact that this institution must not be just another MIT or Cal Tech or University of Chicago. It must develop distinctive and recognized characteristics appropriate to the times -- times which indeed it can help or define.

I won't go into all the reasons why these space programs are important to the very survival of the nation. Such reasons could well be the subject of another presentation at some other time, but let it suffice to say that the space competition we are in with the Soviet Union is a very serious business. The country we save may be our own. This effort will demand more technical men than we have on tap right now. The space university - as it has come to be called - would provide a reservoir of trained personnel for future years that could be directly applied. Frankly, right now we are engaged in a recruiting campaign for the Daytona General Electric Apollo project that is unparalleled in our history, and we are finding it somewhat difficult to get enough of the right types of people to do the work.

If we had had a proper space university in operation over a reasonable period of time the situation would not be as severe as it is now.

- Airport offering jet service must readily be accessible.

- Community must be able to absorb the quantity of families anticipated.

- Community must have cultural, educational and recreational facilities to attract and hold scientific and professional people.

These criteria were added to company criteria which are specified for location of GE plants which are:

- Company should show signs of progress and expansion.

- No significant GE plant within 50 miles.

Once location criteria had been established by the operating department, the functional experts in the services components were then made a part of the project. The General Electric Real Estate and Construction Operation was the specific organization that contributed most heavily from this point forward.

The first step, after they joined the effort, was to consider location criteria from a corporate point of view. Here many of the same points are looked at that we had considered from a more parochial point of view. For example:

- Location of major GE customers.

- States where GE plants are presently located.

- Dispersion of defense oriented business components.

When criteria for the location of our new business component had been established and agreed to by the Services Components and the Defense Systems Dept., we started matching business requirements with community requirements with community resources. A location search was made with data which is readily available. Two documents of value to us in this effort are:

Rand McNally Road Atlas  
Editor and Publisher Market Guide

If you have never gone through one of these exercises it would surprise you how few cities there are in the U.S. that meet the criteria we develop. Since there never is a pat answer on locations surveys, you find that after a first run through, you quite often re-examine your criteria and relax one or more of them. For instance, you could decide to examine communities smaller than 250,000 population.

After the list of prospective communities was developed, detailed surveys of each were made by a team of people made up from the Service Components and the operating department.

I'd like to mention some of the factors we take into consideration in these community surveys or you might call it the philosophy which guides us in these efforts.

We recognize that people are our most valuable resources and the city selected must be a place where people want to live, educate children, and brag about to their

out-of-town friends and relatives. Our community survey concentrates on the very personal aspects of the city.

G.E. is proud of the contribution it has made in helping make this country the great place it is; it further recognizes that to continue making this contribution it must operate in an environment which contributes to the profitable operation of the company because without profit business withers. Talk of a healthy business climate is very serious with us and we diagnose the business climate of the areas we survey.

Finally, we recognize that there is no such thing as a free lunch, that no one gets something for nothing, and we are ready to carry our fair share of taxes and other community obligations. A community with a healthy business climate does not need to offer inducements.

Our community surveys are conducted in very organized fashion, following a format that was developed by our plant location consultant several years ago. This format allows us to collect the same data from the various cities so that later we are comparing like quantities. It also serves as a checklist against which we can check progress each day.

During the community surveys we attempt to conceal the corporate identity and this part of the total job, in many cases, approaches the "cloak and dagger" type. You leave all your GE pens and pencils home, you never out loud compare the weather with Syracuse; you even, on occasion, use a false name and address.

Our first contact usually is with the Chamber of Commerce. We explain to them the kind of a company we represent, how long we have to do our survey and the kind of data we will require.

We gain an important first impression at this meeting, that of seeing how responsive the community is to an industrial prospect.

We use data compiled by the various levels of government and rely heavily on the interview technique to collect detailed information on the community. Each evening, the day's notes are compiled into a written report, since we have found that, human nature being what it is, any city gets more glamorous the longer you are away from it.

An essential section of our community survey is the 20 year forecast of the community and its environs. This is one section where Oklahoma City compared very favorably, the basic reason being that the essential services were in place with plans to expand them as required to meet the needs of the residential and business community.

You will note that we have not placed any particular degree of emphasis on site requirements or site surveys so far. At this point, during the community survey, we seek to determine the availability of industrial sites meeting our general requirements. Normally, a location attractive to you for other business reasons will have available plenty of adequate industrial sites. An intensive site survey is accomplished after selecting the community.

As the number of communities being considered is narrowed to two or three, however, activity aimed at finding a suitable site is intensified.

After the site selection has been made, we then proceed to request funds to start the lengthy process of the actual business relocation.

Let me now give some reasons for selecting Oklahoma City of the several other sites considered:

GE presently had no plant in Oklahoma and this location satisfied company dispersion criteria for its defense business.

Oklahoma City is on the periphery of the "space crescent", being close to Hudson, Tulsa, etc.

Current manufacturing employment is small percentage of total civilian non-farm work force.

Transcontinental jet service is available.

Excellent hotel, motel, restaurant, meeting facilities.

Excellent technical university within 15 miles.

Positive evidence of a sense of religious responsibility.

Adequate, value housing available.

Favorable wage levels.

Strong, dynamic, interested community leaders.

This entire presentation has been heavily oriented to business considerations and much less emphasis has been placed on the site selection and building design and construction. The reason is that in General Electric we are more concerned with building business than factories.

In summary, we know that the space and defense electronics business will grow and prosper in Oklahoma City, Houston, Huntsville and Daytona Beach. You people have the eyes of the world on you. Good luck over the months to come.