HINDSIGHT OR FORESIGHT?
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by Long-Range Planning

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The United States naval shore establishment presents an almost fantastically difficult physical planning problem. Consider the four basic factors that make this problem so difficult:

1. The facilities of a naval base or station exist to provide services to (a) ships, (b) aircraft, and (c) officers and seamen. The basic characteristics of the first two are subject to sudden and unexpected changes. While the physical characteristics of the third (the officers and men) change but little, their manner of living changes in line with similar changes in our society. The shore establishment must serve these changed requirements.

2. Basic decisions are made in regard to the development of a shore station facility by officers whose tour of duty is quite short. A constant change is involved.

3. Physical growth of a naval base or station is not steady and progressive but is characterized by long years of "starvation" when there are insufficient funds for proper maintenance and much less new construction, followed by years of wartime pressure when vast expenditures are predicated on necessarily hasty, overnight decisions. Many of us, I am sure, have wished that the earth would open up and swallow the products of some of these quick decisions.

4. The naval base or station is assumed, in spite of the above, to be able to provide efficient service for decades, if not for centuries. When ships or aircraft become obsolete, we can quietly do away with them. However, we are seldom allowed to do this with obsolete portions of the shore establishment.

Costly, quaint relics of whims

In view of the above four basic factors that affect the shore establishment, it is little wonder that we find in most cases a legacy of improvements that are a hodgepodge, mixed up and messed up, containing here and there quaint relics of previous commanding officers' whims, costly to operate and maintain, inefficient and ineffective in providing the services for which they were intended, and rightly denounced as a waste of the taxpayers' money.

To a student of the historic development of these establishments, and particularly one who understands the above four basic factors, the wonder, however, is that they are as good as they are!

Navy planning

The Navy has recognized the above difficulties. The planning problems of a naval station or base are quite similar to those of a city. The city is confronted with similar problems of obsolescence, changing needs, and changing personnel.

The first master plan for a military base was prepared early in World War II. The Army and the Air Force have had master planning procedures since this time. The first Navy planning directive was issued in September, 1952. This required the preparation and adherence to Shore Station Development Plans for each establishment. This was followed in 1955 by a directive for "regional plans," which permitted a broad planning approach to be taken where there were several naval facilities within the same geographical area, such as Norfolk, Puget Sound, or Subic Bay. Shore Station Development Boards—similar to city planning commissions—review and approve the master plans. All new construction is to be in accordance with the master plans. Both the detailed shore station development plans and the more general regional plans are to be kept up to date through constant research, study, and revision.

"Superior" Navy instructions

In general, the Navy planning directives are excellent. The regional planning instructions are as good a planning document as we have in the United States.

Good master plans needed

The directives, however, can go only so far. They can tell you how to go about making a master plan and just exactly what the finished document should contain and look like. It is quite possible to comply with these directives and have a master plan that is either no plan at all or, even worse, a poor or inadequate plan. Unfortunately, good plans cannot be produced by fiat or by directive.

Perhaps it would be well at this point to define more
closely what is meant by a "good master plan." A good master plan is a plan that does four things:
1. Meets the needs.
2. Puts right things in the right place.
3. Fits the site.
4. Accommodates the unexpected.

To clarify these four characteristics let me cite some examples.

1. Meeting the needs

There should be an exhaustive study of actual needs and requirements, following which the most economical and efficient means of meeting these needs should be chosen. For example, there are duplications in fuel storage, public works shops, and power generation at Subic Bay that necessitated extra expense that could have been avoided. At Pearl Harbor, much family housing has been built without recognition of the fact that Navy families, as all families, need recreation area, schools, shopping centers, and other community facilities.

2. Putting things in the right place

Determining the actual needs is the most difficult part of planning. After that is done, the next problem is: Where should things go? Here, there is an important principle that, too frequently, has not been observed: Don’t allow the secondary functions to interfere with the primary function. At a shipyard or naval base, the maneuvering and docking of ships must have first priority; at a naval air station, air operations must have first priority; at an ammunition depot, the storage of the ammunition should have first call on land use. This sounds so elemental as to be almost silly, but look at some of the things that have happened:

a) During World War II at Naval Air Station Barber’s Point, a coral borrow pit was established off the end of one of the runways, even though the Navy owns several hundred acres beyond this borrow pit. Now the runway must be lengthened, and it will require 700,000 cubic yards of fill to eliminate the borrow pit—or a very considerable amount of money to purchase land in the other direction. Someone forgot about the needs of aircraft, the first purpose of the air station.

b) At the same station, fuel tanks have been built in the obstruction zone and too near the runways.

c) At Naval Ammunition Depot Waikiki, barracks must be moved because of a hazardous location too near storage areas. Ammunition is getting first priority, but belatedly.

d) At Naval Station Midway, the location of the control tower requires personnel to cross runways and adds to expense of electric power, utilities, etc. At the present time, a new control tower is being completed. Had the old tower been properly located, this new construction could have been avoided.

e) At the end of World War II, Guam was completely built up with Quonset huts. Various activities that remained grabbed the best available buildings. This resulted in a real hodgepodge. Family housing, for example, ended up in nearly a dozen locations with no convenient community facilities or schools for any segment. With just a little forethought a model community with real convenience and amenity might have been developed for less cost.

f) At Puget Sound Shipyard, a highly developed and congested area, nearly half of the acreage within the shipyard boundary is used for non-shipyard purposes. At Pearl Harbor, the location of the headquarters of the 14th Naval District within the shipyard contributes greatly to traffic congestion and interferes with operating efficiency of both the headquarters and the shipyard.

3. Fitting development to the site

To fit the site, the good master plan should give careful attention to topography, soil conditions, general climate and microclimatology, wind directions, and factors of man-made environment—civilian communities, transportation channels, and the like. Here again we can all recognize when this has not been done—in such cases as the following:

a) At Subic Bay, the most attractive and suitable land for family housing consists of the area chosen and now used for the Naval Magazine, which could have easily gone elsewhere. The ridge containing the magazine could have become a model community, convenient to employment centers and with magnificent views of the harbor.

b) Again at Subic Bay, the runway at the Naval Air Station was aimed right at the mountains. At no greater expense and with equally good wind orientation, the runway could have been so placed that it would have had an unlimited over-water approach in one direction and a six-mile over-water approach in the other direction.

c) At Midway Island, Runway 3-21 constructed at considerable expense had to be abandoned. Why? Because the runway was unnecessarily pointed right toward the central part of the station, and its continued use would have precluded development of land that is about as valuable as that on Manhattan Island.

4. Anticipating the unexpected

Many of the faults in shore station development may be laid directly at the door of the short-sighted, expeditious thinking that produced them. Improvements were made to answer yesterday's needs today without a thought for tomorrow, much less for day after tomorrow. This was done in the planning and location of projects with a life expectancy of as much as fifty to one hundred years.
The one thing of which we are all absolutely certain is that we do not know what the future will bring. In this matter we can place full reliance upon our complete and absolute ignorance. Thus, when we are planning, designing, or locating any facility, the first question we should ask ourselves is: How well will this design accommodate the unexpected? What will happen if the demand on it is doubled? or quadrupled? or cut in two? What can it be used for if the current need disappears entirely?

**Folly to take short-range view**

It is absolute folly to base military installation planning entirely upon current missions. There must be an understanding of over-all functioning of our entire military establishment, of the potential strategic importance of areas and facilities in the light of possibly drastically different technological and international situations. Or, more simply, we must use our imagination. In planning we must build-in the maximum of flexibility.

Let us look at some examples of installations where this was not done:

(a) The harbor channel at Midway was dredged 400 feet wide and 35 feet deep across the shortest and shallowest route between Midway and Sand islands. The extremely valuable real estate on Sand Island is now accessible by boat only. The harbor entrance could just as easily have been brought in through Well’s Harbor on the other side of Sand Island and a causeway readily built connecting Eastern and Sand islands. This would have made a much greater land area available for development—a land area that we could use to great advantage right now although there was no established need for it at the time the channel was dredged.

**“Classic boner of all time”**

b) Probably the classic boner of all time is found at Pearl Harbor. At Pearl, when Hickam Field was located, its boundary was placed right against the shipyard, cutting the shipyard off from logical expansion areas. Hickam Field then proceeded to develop this valuable real estate for—all things—quite extensive, permanent, family housing. This was in spite of the fact that there
are many locations for air fields in the Hawaiian Islands in comparison with potential shipyard locations, and even more numerous locations are available for family housing. Of course, on the day the Hickam boundary was placed the land was not needed for the shipyard—not that day. However, in World War II it was necessary for the Navy to build a shipyard annex across the channel in a separated location much more costly to build and to operate.

c) Many other examples could be cited, including the Guam shipyard built on a peninsula backing into the Naval Operating Base area; the Ship Repair Facility at Subic, which had no planned means of expansion; and the Naval Supply Depot at Seattle, which is completely surrounded by urban development and cannot expand at its present location.

Does master planning really work?

While the Navy's planning system has not been in operation for a very long period of time, we have had some experience with it which leads us to believe that it contains real potentialities in the saving of money in both construction and operation. In association with the firm of Pereira and Luckman, our office currently has the good fortune to be doing the architect-engineer work on major expansion programs at Naval Station Midway and Naval Air Station Barber's Point. Both of these stations had master shore station development plans. What good did these plans do?

Midway crash program

The program at Midway is a crash program with a mission considerably different from the one that formed the basis for the master plan. However, because of the data, information, studies, and proposals assembled in convenient form in the master plan, and because the master plan was a good plan meeting the criteria described above, the siting and arrangement of facilities for the crash program offered no problem at all. In fact, it was possible to obtain approval by the Station on proposed siting of thirty million dollars of construction in
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one half day. This is a major benefit of the master plan: intelligent decisions can be made quickly; the master plan saves valuable time.

Now for some details of the Midway project:

1. In the preparation of the Midway master plan it was realized that any major construction program on that island would require importation of a considerable construction force, and the master plan earmarked certain areas for a construction camp. When the crash program came along, it was simple to allocate this land to the construction contractor.

2. When the master plan was being prepared it was evident that the sea walls on Midway were rapidly deteriorating. At the same time, while there was no requirement for any runway extensions, the potentials for runway extension indicated that the only practical possibility would require filling into shallow water. Such a fill would have rendered useless between 3000 and 4000 feet of quay wall. Consequently, the master plan proposed that this quay wall, when replaced, be replaced in the location that would allow the runway extension. Under the crash program, channel and harbor dredging was necessary. This produced fill, which has been placed in this shallow area. The new quay wall has been built in the location proposed in the plan. As a result, at no increase in cost whatsoever, land has been provided for this runway extension. This can be done in the future simply by putting down pavement on the newly filled area.

3. A very significant problem is being easily solved because of the master plan in the location of additional fuel storage tanks. The master plan recommends that, if and when an area for fuel tank expansion is needed, it should be obtained by filling in a small boat harbor that did not need to be retained. Without this previously made planning decision it would have been most difficult to reach such a conclusion under present emergency conditions.

The entire expansion program at the Barber's Point Naval Air Station is being built in accordance with the master plan, including barracks, a major hangar, and taxi ways. Significant time was saved and no doubt many controversies eliminated through availability of an agreed-upon master plan.

At least $3,000,000 saved

Many of the benefits of master planning are intangible and most difficult to appraise in terms of dollars. However, it is our considered judgment that, on the Barber's Point and Midway expansion programs, somewhere in the vicinity of three to five millions of dollars has been saved by availability of adequate master plans. In addition, the saving in time has amounted to several months, perhaps as much as a year. If similar proportionate savings could be made throughout our entire military establishment, the potential annual saving (some of which is being made) might well be in the vicinity of $150,000,000 to $175,000,000. Based on our experience the first step to save money on military construction is to spend money on long-range planning. The “freezing” of Navy planning funds in recent months is thus the antithesis of true economy.

Improvements for the planning process

The Navy's planning process is quite new. From the above examples, we feel that it has already proved its usefulness. However, there is no question but that it has a long way to go to reach its full potential. Participation in this conference gives me the opportunity to air some of our pet ideas for improvement of master planning. We have four major suggestions:

1. Put more planning into the process

The planning directives strive for complete uniformity of documentation throughout the naval establishments. The insistence on complete uniformity should be reduced to just a few basic items and more of a variance in format encouraged. Problems differ from one establishment to another; documentation should fit local problems.

In most instances it is difficult to "get through" the great mass of miscellaneous information and maps in the typical regional or shore station development plan to "get at" the plan itself and, more important, the basic reasoning that led to the plan itself.

On our master planning work for the Navy we estimate that we spend twenty-five to thirty per cent of our time actually doing planning—the remainder being spent in assembling information and data called for in the directive.

Many of the basic data found in the typical master plan are of great value although not necessarily of great value to—or pertinent to—the master plan itself. Possibly these data could best be compiled by a different agency and kept apart from the planning process.

The planning directive as recently revised still does not place sufficient emphasis on the plan itself, what it proposes, and why the proposals were made. If some statistic is not pertinent to the particular plan, it should not be necessary to include it.

As another important part of this process, the revisions of the plan should be approached more thoroughly. Perhaps something has happened that completely undermines a basic assumption that underlies a master plan. If this is the case, the whole concept and the entire plan should be changed together with all the statistics, reasoning, and data that support the plan. The master plans can be fully effective only if they can be kept up to date.

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One aspect of Air Force planning could profitably be borrowed by the Navy. This is the “Maximum Capabilities Plan,” by means of which the full potentialities of a site for military use are explored. Such studies frequently reveal unexpected assets of a particular location that could be used to great advantage in formulating high-level policy.

2. Put more rank into the planning

It is quite obvious that the physical plan of any shore station must be predicated upon and reflect the current thinking at the highest possible level. It should be the direct and personal responsibility of at least the commandant of the naval district. It should be headed by an officer of at least the rank of captain, an officer on the admiral’s staff.

We frequently see instances where the regional planning is approached from the highest possible level in the beginning; but then, gradually over a period of years, the stature of the planning agency deteriorates until you end up with a few boys in the back room under the part-time direction of an ensign. Planning of this type is really worse than not doing any at all because it can reflect only what has been decided—it cannot influence the intelligent decision, which is the real purpose of any planning.

In connection with this problem of rank, it is important to observe that many officers hesitate to place themselves in the position of direct disagreement with their superiors. Such a situation can be fatal to a master planning program, as one of its major benefits can come through its ability to persuade the admiral that he may be about to make a wrong decision. From this point of view we think there is a lot of real value to be obtained from the employment of an outside civilian architect-engineer firm of some experience and stature in giving the officers a truly objective point of view.

In this connection one of the biggest obstacles to accomplishing good planning in the past has been the authority of the commanding officer. An outright prejudice or a whim on his part can be very difficult to deal with. Education and training of naval officers in understanding planning are badly needed here.

3. Broaden the planning base

As previously mentioned, the Navy has gone as far as any of the civilian governmental agencies, and certainly farther than any of the other branches of the military establishment, in requiring that planning be approached from the broadest point of view. Still more needs to be done here, however. There is much benefit that could be obtained from preparing the regional plans as a Department of Defense activity considering all branches of the military establishment in a co-ordinated manner. We certainly should not have cases such as that we learned of a few days ago, where the Air Force in preparing a master plan for Hickam Field ignored the regional plan for Pearl Harbor prepared by the Navy. Both facilities have the same highway approach, yet solution of their serious traffic problems is not being approached jointly—the only approach that will lead to a solution.

There is also a great benefit to be obtained in more direct co-ordination and co-operation in planning between the military and the civilian planning agencies. I know of virtually no instances where this has occurred up to the present time.

4. Give planning “TLC”

In a recent magazine article there was a most interesting account of the director of an Indiana mental hospital who had been obtaining some wonderful results from some of the new drugs. When interviewed about his success, he ascribed most of the benefits, however, to what he termed “TLC.” “TLC” was his abbreviation for “tender loving care,” and it does seem that we need to apply a lot more “TLC” to the master plans in the Navy establishment. I think all of us are far too prone to look on anything that gets in our way as an unnecessary impediment.

Unfortunately, the design professions, including the architects and civil engineers, are most frequently found among those anxious, if not eager, to brush aside the recommendations of a master plan. No doubt there is a certain amount of professional jealousy involved here.

It is high time that the design professions realized that their place in our society can be maintained only by the completely satisfactory results of their efforts. One good building, or a good sewer, or a good bridge is not going to be enough. It is only when the design professions can show an ability to make a satisfactory and effective physical pattern out of buildings, bridges, sewers, and all the various facilities that make up our military establishments, as well as our communities, that the design professions can be recognized as making a real contribution to our society.

It is up to all of us who have anything to do with the physical development of the Navy shore station establishment to give sympathetic understanding and support to the master plan, the master planning problems, and the master planning process. Herein lies one way that we know—from experience—will enable us to save substantial sums in military construction.