AIRPLANE HANGAR PLANNING

assembling the project team

Typically, the planning phase of a hangar project involves a relatively small number of airline in-house personnel. They should represent all functions that will use the new hangar. Department heads or supervisors who are responsible for airplane maintenance and key individuals from flight operations and facilities usually are most involved. Other departments such as ground-support equipment, cargo operations, corporate management, and information systems often participate in the initial requirements study and subsequent planning and design phases. It is also important that facilities maintenance personnel, crane operators, and fire and safety personnel review the planning documents to ensure the plan is viable.

PROJECT MANAGER

In addition to having the appropriate in-house team members, the program must be led by an effective and empowered project manager. The project manager is responsible for meeting project goals and must be skilled at coordinating input from a diverse group of managers and specialists. An effective project manager has the authority, time, and qualifications to successfully attain project goals. He or she must be empowered by the organization to make the decisions necessary to maintain cost, schedule, and quality goals, or the hangar project will suffer.

PLANNING AND DESIGN CONSULTANTS

In many cases, the project manager will supplement the in-house team with an architect-engineer, cost estimator, construction manager, or construction contractor. These consultants contribute familiarity with building design, permits, and construction practice, including project costs, scheduling, and mistake avoidance. The role of project consultants is not to establish goals but to assist the in-house team in developing realistic goals. Corporate objectives can be met only if the project cost, schedule, and quality goals are established by the in-house project team, not by consultants.

CONSULTANT SELECTION

Consultants should have a proven record in the planning, design, and construction of airplane hangars similar to the project under consideration. Design professionals are a necessary part of the hangar project team, and they must have experience with aviation facilities to be effective. The consultants should be familiar with not only building and site design but also with typical airline hangar operating and maintenance procedures. Because the cost of planning and design is low compared with the cost of construction, these consultants should be selected for their qualifications and not necessarily the lowest fee.

planning considerations

A hangar project team should consider the following points during the planning process:

- Rarely will a project be completed without spending at least 5 percent of the construction bid price on errors, omissions, and unforeseen conditions. A 10 percent construction cost contingency is recommended for normal projects, and even greater contingencies are recommended for highly complex, incompletely scoped, or fast-track projects. Construction contingency should not be used to fund optional changes that are not related to errors or unforeseen conditions.
- Errors, omissions, and unforeseen conditions can be minimized by having an experienced construction professional (versus a design professional) review the planning and design drawings. This should save 3 percent of construction cost by minimizing design-related flaws.
- The hangar project team should avoid using other hangar drawings as a starting point for its own. The best way to plan and design a hangar is to start from scratch. If the hangar project team uses someone else's drawings as a starting point, the team will build a hangar that meets someone else's needs — not its own.
- When planning a hangar facility, the team must envision airline needs for the next 20 years and then site the hangar accordingly. For example, if the airline needs a second hangar in five years, operations will be much more efficient if the second hangar can be placed adjacent to the one presently in planning. In this case, the team should plan to have the additional space available for expansion should the need arise.
- The team also needs to establish early on what the airport will provide at its expense and what the airline will be required to provide. For example, some airports will pay for the ramp construction in front of the new hangar; others will not.
- There is no single best way to contract a hangar project. The selected contract path should be tailored to the needs of the specific project. (If the project is poorly managed or the contractor is inexperienced or untrustworthy, no contract is strong enough to offset the potential high costs and schedule delays.)
- A successful project carefully balances schedule, cost, and quality, placing appropriate emphasis on each factor. Very inexpensive projects may cost an airline more money in the long run because of operational inefficiencies and high maintenance charges. Fast-track projects will certainly cost more than projects completed under normal schedules. High-technology, high-quality hangars will cost more than basic facilities.
- Airplane hangars often are too small as soon as they are built. As airlines change strategies and new airplanes come to market, hangar size requirements change accordingly. A rule of thumb is to size a new hangar for the next larger airplane than currently anticipated. For example, a Boeing 737-700 airline should consider sizing its new hangar to fit a 757-200.
- Regardless of pressures to tighten the project schedule, the hangar project team must not lose sight of the value of good planning. Because progress often is measured by tangible factors such as the quantity of completed design drawings or by the amount of construction work in place, planning sometimes will be viewed by others as lack of progress. This perception is accentuated when project schedules are tight.
- Studies of the best aviation companies have shown that good project planning is even more important in a fast-track environment. In a fast-track environment, an effective project team establishes a strong project plan and then accelerates design and construction to meet the scheduling goals of the project. One of the worst mistakes a hangar project team can make is to sacrifice planning to accelerate the project schedule.