Aircraft Hangar Development Guide

A Valuable Airport Resource

AOPA AIRPORT SUPPORT NETWORK

CONTENTS

The AOPA Airport Support Network program was introduced in 1997 in order to assist members in preserving general aviation airports throughout the United States. Today, AOPA works with some 1700 Airport Support Network volunteers to promote, protect and defend America's community airports.

This Aircraft Hangar Development Guide is another in a series of publications AOPA has created in order to help individual volunteers keep their airport healthy, vibrant and growing.

For more information on the Airport Support Network program, please contact us at

AOPA Airport Support Network
421 Aviation Way
Frederick, Maryland 21701
301-695-2200
asn@aopa.org

Or log onto www.aopa.org/asn

Aircraft Hangar Development Guide
Version 1

PROJECT EXECUTION

Many hangar projects are erroneously started in what should be the fourth step—project execution. Bypassing the first three planning steps usually leads to frustration and project failure. If you have turned to this section in an attempt to shorten the process, go back to the beginning. Following this guide step by step will ultimately save you time, effort, and money.

All of the project pre-planning and preparation to this point begins to pay off. During the project execution phase you will complete the project design and funding, solicit bids, award the construction contract, build the hangars, and move in tenants. In this phase, it also is important to implement the seven principles of project management discussed in Step Three (page 14). There will be changes that must be incorporated into the project plan (change in funding sources, regulations, stakeholders, size of project scope), and using these principles can ensure the best possible outcome.

Project design and funding

You should have already decided whether to have the hangar project done privately by a developer or publicly by the airport owner. Depending on which option you selected you will have varying levels of involvement. Some of the responsibilities of each option are detailed in this section.

Privately built and managed: The private ownership and management option requires a land lease or purchase agreement between the airport owner and private developer. The airport owner will likely prepare these documents but you should be involved—your knowledge of and work on the project will be valuable.

If a developer is allowed to purchase airport property, it is vitally important that the FAA becomes involved early in the discussions because the agency has stringent requirements governing such matters. Any sale of airport property must receive FAA approval and be conducted at full fair market value, with proceeds going to the airport.

If the developer will lease airport property, consider the appropriate term of the lease. (Typical leases run 25 to 30 years; however, in some cases, the lease term may be tied to the level of capital development proposed.) Establish what will happen to the hangars after the lease expires: Will the lease be eligible for extensions in time? How many extensions? Or will the hangars revert to the airport owner at the end of the lease term? The final terms of any lease should hinge on the length of the lease term as well as the level of investment involved. Also include a clause in the lease that allows the airport owner to be involved in the hangar project to help ensure that building codes, permits, inspection requirements, and the like are met.

You will need to assist the developer throughout the project by obtaining any required permits, integrating the project into existing airport infrastructure, obtaining funding and project management for non-developer portions of the project, and monitoring the progress of construction. You will also be responsible for resolving any issues that may arise between the developer and airport owner representative. Participating in the final inspection and acceptance of hangars and ensuring compliance of the lease agreements will also be a priority.

Airport owner-built and -managed: If the airport owner is going to build and manage the hangars, you will have a lot more work to do. But it will also generate significantly more revenue for the airport, which could lead to additional airport development projects being funded with existing airport revenue.

If you have already been working with an engineering consultant on the preliminary design steps of your project, you will need to finalize a contract for completing the design work. You will need input and assistance from the airport owner's legal staff or representative to prepare this contract because the decision makers in city hall will probably have to approve the contract.

Once the design contract is in place, get the engineering consultant started on the detail design. In some cases you might need to hire an architectural firm to complete some of the building designs.

Design Elements

- Underground drainage and storm water runoff control
- Underground utility layouts, fire protection sprinkler systems, electric, telephone, cable, sewer, gas piping, and tie-ins to existing systems
- Site grading, contour, excavation, and sub-base material plans
- Concrete hangar foundations
- Ramp, taxiway, and apron paving
- Architectural treatments and material specifications for hangars
- Structural design of hangars (may be done by building supplier)
- Ramp and hangar lighting
- Landscaping
- Security fencing, gates, and personnel walk-through gates
- Parking lots as required and pedestrian walkways
- Not all of these elements will be necessary for all hangar development projects. The engineering contractor will be able to provide appropriate guidance for your project.

While the project designs are under way, begin to work through your review and approval plan. Many projects require multiple reviews throughout the process, so plan ahead. Depending on the nature of the project (private or public), the funding might need to be in place before beginning the detailed project design work. So, the next task might be to obtain funding instead of beginning design work, you will need to determine what is appropriate in your case.

Obtain funding

By now you should have a good idea of how much time will be required to get the funding in place to proceed with construction. The engineering consultant might also be familiar with the processes used by the FAA, state, county, or city when applying for grants or loans. The details of the funding process are outside the scope of this guide, but the basics have been identified, including the owner's staff responsibilities.

FAA AIP grants: The FAA has a specific process for applying for and receiving grant money from the Aviation Trust Fund. Before the FAA will grant any money for an airport project, the grant-eligible aspects of a project must be included on the airport's annual airport capital improvement project (ACIP) list. The FAA also expects that the estimates used in the ACIP list for grant-eligible items be accurate within 10 percent of the final cost, so allow for escalation of costs in these estimates. To obtain cost estimates, the design consultant will need to do some preliminary design engineering.

The FAA requires that the ACIP list be updated annually in early December for the following calendar year. This means that the hangar project must be on the airport's ACIP list the year *before* you would expect to receive funding. Don't forget to incorporate this reality into your project schedule. The FAA will only fund hangar development projects at eligible airports, provided that the airport certifies that all airside devel-

opment projects in the ACIP have been planned for future implementation.

Public or private loans: Project loans, whether from private banks or state, county, or municipal sources, can take a considerable length of time to become a reality. ("Project Planning — Step Three" should have given you an idea of what you'll be facing at this point in the project.)

Municipal (government) bonds: If your project-funding plan includes publicly-or privately-issued bonds, remember that this too can be time consuming. The airport owner's financial staff can be a valuable resource when preparing the details of a bond issue or sale.

You can likely use the financial projections you developed in Step Three when you did your preliminary financial impact estimates for your project. If project costs have changed, you should be able to easily update your *proforma* to satisfy the needs of your funding sources. (See Appendix II.)

Construction planning

With the hangar project design complete, funding in place, and approvals in hand, prepare for construction. Some of the things you need will include a contracting plan, a performance based contract, bid packages, and bid review and approval.

The project engineering consultant or staff should be able to create a contracting plan and construction schedule suited to your project. A contracting plan identifies which elements of the construction will be combined to increase efficiency. Often, all of the construction elements can be bid together with one contractor, for things such as underground utility and drainage, site grading, concrete foundations, building design and materials, building erection, electrical and area lighting, fencing, paving, and more.

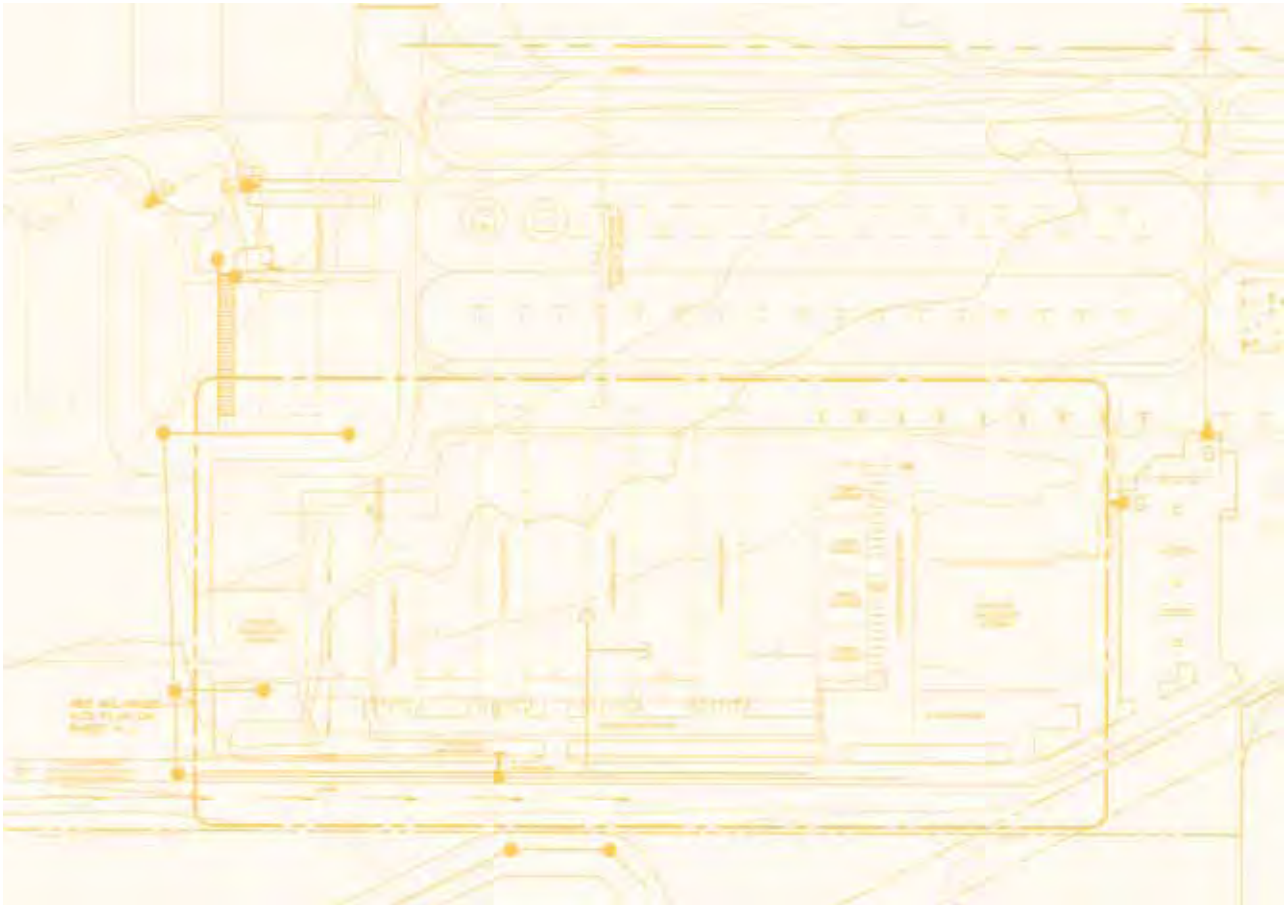
Experience has shown that the fewer contracts the better as this forces the contractor to be responsible for the coordination and facilitation of all the interacting parts of the project. This method also reduces the workload on whoever will be coordinating the contractor(s) on site.

Decide who will serve as the overall project manager for construction. In most cases, a city engineer or the design engineer will fill this role. The airport owner will likely want to retain this role through an existing engineering staff. However, he or she may charge a substantial fee for this. (Be mindful of the potential economic impact this could have on the project.) An efficient method would be to bid the entire construction project to one general contractor and pay the engineering consultant to act as construction manager and airport owner representative. The engineering consultant is ideal for the job because he or she already has done the engineering and design work.

Contract wording

It is imperative that the person preparing the contract prior to the bid process addresses specific items related to the project. Many items can be included in standard contract clauses by the airport owner, but make sure that the airport design and/or construction manager reviews the contract for completeness prior to releasing the project for bids. Later, if you find yourself in a tough situation with the hired contractor, falling back on a complete and detailed contract will be invaluable. This guide provides a few suggestions that should be included, but tailor the contract to fit your project. A competent lawyer will be a must.

Schedule of values: A schedule of values, or unit prices, is a required element of contracts at most publicly-owned airports and for all airports using FAA funding. The FAA requires that all the books associated with the project be open. The contractor must provide his schedule of values so that the resident engineer (the individual from the airport owner's staff or the engineering consultant who is responsible for overseeing contractor performance) can approve contractor "progress payments." The vast majority of construction contracts are based on a lump-sum bid, but contractors will expect to be compensated as the construction progresses. These progress payments must be based on actual construction progress. Sometimes contractors will submit a bill for significantly more progress than has actually been completed. Without a schedule of values, you won't be able to easily refute such claims. For example, if a contractor bills the airport owner for 20 percent of the rough grading, the resident engineer must be able to verify that 20 percent has been completed. Payment will be



based on 20 percent of the total cost of rough grading, usually measured in cubic yards. The schedule of values provided by the contractor with his or her bid should provide the cost per cubic yard of this rough grading.

Without this schedule of values, the resident engineer will not be able to approve such billings for payment. In addition, the FAA requires a schedule of values as documentation. Some contractors may be reluctant to provide such detail with their bid, but it is required by FAA regulations.

Unknowns and surprises: Unforseen circumstances can arise during the construction phase of a project, whether unplanned by contractor or unexpected by all parties involved. How such cases will be handled should be laid out in detail in the construction contract. For example, the contractor must immediately notify the resident engineer of a "surprise." Then the resident engineer must review and evaluate the claim of a surprise and decide whether it would constitute an actual change. The resident engineer would negotiate the change based on time and materials or unit price or lump sum basis to complete the additional work. The time-and-materials approach must be detailed clearly in the contract wording, including an appropriate mark-up for profit. This approach should prevent a contractor from taking advantage of the surprise.

Notice of potential claim: This situation arises when the resident engineer says there is no change in the project but the contractor thinks there is. In such a case the claim for "extra work" would go to arbitration, where an impartial third party would decide whether the contractor's claim has merit. Ensure that your contract covers such circumstances so the project can keep moving while the claim is in arbitration. The resident engineer would track costs for the change, including time and materials. When the work is substantially complete, the final claim would go to the arbitrator who would authorize final payment.

Delays: During the course of construction the contractor may notify the resident engineer of a delay. If this is caused by late material deliveries call the supplier to confirm the delay. Get the facts and assess the impact on the overall project schedule. There may be ways to adjust the schedule by rearranging various aspects of the project, such as inspections or approvals.

If there is no solution to get back on schedule, the resident engineer should estimate the cost to the client which, in this example is the airport owner. This would include liquidated damages, which would usually include loss of potential revenue and additional overhead expenses. These must be quantified and how these are calculated must be available to the contractor. This information would be used should the airport owner wish to file a claim against the contractor for the financial impact

of the delay on the project. If the contractor is not at fault, it could be necessary for the contractor to pursue the supplier. The best protection is to have all such provisions for handling delays specifically explained in the contract.

Standard retention: In most contracts, a set amount of the total contract will be withheld until the airport owner has accepted all work as complete and satisfactory. The standard retention amount is 10 percent of the total contract price. (This also applies to claims of extra work.) The contract should be clear on this subject. Be sure there are provisions in the contract that spell out how and when the parties would go to an arbitrator if an agreement cannot be reached. The 10 percent rule is used because it is usually enough to cover the cost of completing the work if the contractor quits near the end of the project. It is unusual for this to happen, but the contract should allow for this possibility.

Progress inspections: The resident engineer is usually responsible for monitoring daily progress. This is to be certain that progress billings from the contractor can be verified.

Specialty inspections: Specialty inspections include architectural, construction, underground, plumbing, electrical, and other necessary inspections. The resident engineer usually coordinates inspections that are required by the airport owner's building department and are all part of a final project inspection and acceptance. Most building departments conduct inspections so as to not impede the construction progress. The key to efficient use of project inspectors is for the resident engineer to notify the appropriate inspector in plenty of time so that schedules can be coordinated. Be sure to include the time required to schedule and conduct these inspections in your contract so the contractor is aware.

FAA inspection: The FAA requires a final inspection (and some during the course of the construction) to ensure that their requirements have been met. The FAA requires taxiway slope, fill material compaction, and concrete tests. The airport design consulting engineer should be aware of the detailed FAA requirements.

Punch list: The resident engineer and airport owner inspectors usually draw up a punch list of items that must be completed by the contractor before the construction can be considered complete or accepted by the airport owner. Items such as hangar door adjustment, touch up painting, and other minor items are often on a punch list.

Temporary occupancy permit: A temporary permit for occupancy may be issued by the airport owner to allow tenants to move into their new hangars should some remaining construction punch list items remain open, such as final landscaping. The benefit of a temporary occupancy permit is that it allows the revenue stream to start before the construction project is complete.

Notice of completion: This is a formal notification of project closeout. It gives anyone involved in the project an official notice that they have a period of time (normally 35 days) to file any lien claims on the project. It also frees up the property for final occupancy. After the 35 days and after all punch list items are complete the airport owner can release the 10 percent payment retention. Less any uncompleted or disputed items. It is usual to retain up to twice the amount in dispute from the overall 10 percent. Be sure that your contract contains wording to cover your project in this area.

Construction bonds: A bond is intended to protect the airport owner in the event that the contractor does not complete the project. For example, the contractor could go out of business or walk off the project. The bond works like an insurance policy, providing funds for the airport owner to com-

plete the project.
Also, there should be a 10-percent bid bond in place in case the awarded contractor refuses to enter into a contract. Once a contract is awarded, this bond is refunded to the contractor. If the contractor refuses to enter into a contract, he or she forfeits the bond. Make sure the contract includes specific details regarding the bonding requirements.

Contractor qualification: The contract should contain some wording requiring that the contractor is qualified to do work at an airport. Some of the unique elements of an airport construction project require a contractor experienced in working on airports. An inexperienced construction contractor could make any number of mistakes, causing problems for the project.

Bidding

The airport owner will have specific requirements for compiling a bid package. The engineering consultant will likely prepare the bid packages. In addition to the detailed design drawings, the package will include material specifications, grading plans, utility connections to existing facilities, certificates of nonsegregated facilities, bonding certificates, insurance documentation, how extra work claims will be handled, and other standard clauses as dictated by the airport owner. Include any FAA, state, or county requirements.

Pre-qualify potential bidders while the bid packages are being prepared. The airport owner's engineering staff or the engineering consultant should know contractors who are capable of handling the project. It would be preferable that only contractors with prior airport construction experience bid on the project. However, this might not be practical in every case. The airport owner may have a specific process that he or she uses for bidding construction contracts and most often can handle this entire portion of the project.

Project site walk: Once the bid packages are released, the bidders will have a standard length of time to prepare their bids. Schedule a job site walk early in the bid period. The project manager (engineering consultant or airport owner representative) will schedule a time, usually included in the bid documents themselves, to have all interested bidders meet at the project site.

During the site walk, the bidders' representatives will have an opportunity to ask questions about the project. Pay particular attention to the subtle aspects of a project that may be obvious to you and the airport owner, because it might not be to the bidders. These includes utility tie-ins, special soil conditions, noise or curfew restrictions, impact of continuing airport operations during construction, and key owner contact during construction. Given the interest shown by the bidders at the site walk, you might get an idea of how interested they

are in bidding.

Bid opening and review: In the public arena, bid opening usually includes a public opening where the bid amounts and names of the contractors are announced. Once opened, the packages usually go through a review to ensure that all elements of the construction project have been included in the bid; sometimes contractors will miss a part of a project or misunderstand the intent of the bid package. The airport owner's engineering staff will usually do this, but you can also have your project manager or engineering consultant review them as well.

Bids may come in well above or below the project cost estimate, leaving you with a number of alternatives to pursue.

Bids are too high

- Cancel the project and return the funding
- Seek additional funding
- Reduce the scope of the project (revise the financial projections accordingly)
- Proceed with the project, and work to secure additional funding (not likely as most airport owners will want to have the funds in hand to complete the project before agreeing to award a construction contract)

Bids are too low

- Continue with the project and return or "bank" the surplus funds if below your estimate
- Increase the scope of the project (revise your financial projections accordingly)

Last-minute potential problems

Problems can arise and even kill your hangar project. Here are a few examples of issues you may face.

Potential obstacles to completion

- Uncooperative airport lease holder or property owners that change their minds regarding the use of their property for airport hangars
- Changes in key decision makers to include airport opponents
- Local community groups seeking to block the project, citing noise, traffic, and safety issues
- Unresolved issues from prior projects that were not uncovered earlier
- Changes to rules and regulations impacting the operations of the airport
- Loss of funding

These are just some of the last-minute issues that can jeopardize the successful completion of your project despite your careful project planning. However, the support and credibility that you built with stakeholders early in the process can be a project saver. Leverage your relationships with key decision makers, such as city or county council members. With the credibility you have built to date and the demonstrated positive value of the project you should be able to call on these key people to help you negotiate your way to a positive result.

Construction contract award

The airport owner should know how the construction contract award is to be handled. In some cases a senior member of the airport owner's staff can handle this. Or it may require the vote of the city or county governing body to obligate the airport owner to the financial liability of administering a contract. If you are unsure of how such a body will vote on the project, informally poll the group using the connections you have built up during the hangar project process. If further work is necessary to get the construction contract awarded it is best to know ahead of time and deal with these issues. Regardless, the final award of your construction contract should be quite simple at this point.

Negotiation and value engineering: Depending on the scope of the hangar project,

you might have the opportunity to reduce the cost of the project while the contract documents are being finalized. This is called value engineering. During value engineering, you meet with the construction contractor, project designer, and project manager (this may be the airport owner or engineering consultant representative) to review the project design details. Look for elements of the project that, with minor redesign or material substitutions, could save money. After the contract award, your construction contractor may not have much incentive to lower costs. But keep in mind that you could run into "fair contract practice" issues with the other bidders if this discussion is held before contract award. So time this discussion accordingly. It is worth looking at value engineering because there could be significant savings waiting to be uncovered. Value engineering could include the modification of architectural designs, substitution of building wall material, reuse of existing materials such as fencing, substitution of subgrade materials and fill requirements, and deferral of requested project elements by special interest groups.

Once you've completed value engineering, you will have the lowest possible cost for the project. If the contract has been awarded, any changes you make to the basic contract will most likely be included in a change order. Both the original contract and change order must be forwarded to the governing FAA ADO for their review and comment. This is required because you may have an FAA grant included in the project financing. The engineering design consultant more than likely can help you with this.

Pre-construction meeting: At the pre-construction meeting all the various parties meet to review, discuss, and agree on the project construction administration details. Many of these are required by the FAA, and the airport engineering design consultant should be able to help plan and conduct this meeting.

Sample pre-construction

AGENDA

- Labor provisions, prevailing wage rates, etc.
- Project scope review
- Construction observation and quality assurance
  - Project management
    - Sponsor/owner engineer
    - FAA project engineer
    - Engineering consultant representative
    - Airport manager
  - Construction observation/materials testing
    - Project administration
    - Materials testing, quality assurance testing
    - Resident job site engineer
  - Coordination with airport, city staff, FAA, airport users
    - Construction activity coordination
    - Weekly progress meeting
    - Notams issued by airport manager
  - Construction contractor key personnel identified
- Administration
  - Contract award signatures completed
  - Notice to proceed, first day of work, material orders, etc.
  - Project schedule and time limitations reviewed
  - Change orders, review, approval
  - Progress payments
    - Request and documentation
    - Schedule of values (unit prices)
    - Documentation of progress
    - Retention escrow account (usually established by owner/sponsor finance department)
- Construction operations
  - Airport access, security during construction, operations
  - Limitations on contractor operations during construction
  - Public safety: barricades, warning signs, night obstruction lighting
  - Protection and restoration of property at conclusion of construction
    - General limitations
    - Specific project limitations (access to certain areas)
    - Pavement closures and notifications to airport manager

meeting agenda
Hangar construction

There are two keys to a successful construction process. The first is the mindset that you and your team have when you interact with the contractor. The team's mindset should be positive and business-like. This will set the tone for the remainder of the project. When a contractor knows that you will deal with him or her fairly and that you expect the same in return, you will have the best opportunity for a successful construction process.

The second is the efficient administration of the performance-based contract. This depends on the comprehensive nature of the contract and the willingness of the airport owner to hold everyone accountable to the requirements in this document. Work to ensure that construction will proceed with a minimum of problems, delays, and cost overruns. Of course you may not be able to avoid all potentially contentious situations with your construction contractor but you should be able to minimize their impact.

Final FAA construction report: The FAA requires a final construction report (FCR). The airport engineering design and construction management firm, or airport owner representative who is familiar with the project, should prepare this report. The report should contain:

- Project narrative of the construction phase;
- Documentation of any changes made during construction;
- Data from quality assurance tests for concrete, asphalt, base rock, fill;
- Tabulation of final costs, including quantities of materials used and an explanation of differences if the total cost to be covered by an FAA grant is off by more than 10 percent of the amount requested;
- A final payment release request for grant funds (FAA withholds a final 10 percent until this report is received and accepted); and
- An updated airport layout plan with the new hangars and other airport changes shown (include one for your state if they have invested money in the project, and particularly if there are major airport ramp and taxiway changes).

Final thoughts on hangar construction: It is important that both the construction and the design engineering contractors have prior experience working on airport projects. Check and verify their references and experience claims. Airport owners sometimes have their public works in-house engineering staff do the design work. This is usually intended to save money but without prior airport design experience and familiarity with design standards they can cause significant problems.

Hangar buildings are not typical metal buildings. The specifications are unique and differ from the types of buildings the airport owner's engineering staff might have designed. Also, the paving grade on airports is different from the grade on city streets. Paving on city streets can be sloped for drainage with a 2-percent or higher grade. Aircraft owners would not be able to push their airplane up that slope into their hangar. Designing and adjusting hangar sliding doors is not like that of regular steel buildings. Doors must overlap without binding and move with a minimum of physical effort. The architect, building supplier, engineers, and inspectors must be familiar with these types of differences to avoid problems.

Private hangar developer: With private hangar development the developer will carry the responsibility of hangar construction. However, the FAA still needs to approve the designs and methods used on the project. The same contract wording applies to the lease agreement with a private developer. But there are some additional points to include in the contract. Be certain that the developer is required to work closely with the engineering design consultant and resident engineer (or airport owner representative) because the

FAA's design criteria applies to them too. Also include a performance clause that requires the developer to agree on a time period to start and complete the construction. Ensure that the developer cannot agree to build the hangars, thereby tying up open airport property, and then fail to complete the project. Do this by requiring airport land lease payments to start only when all required parties have signed the lease agreement. Add specific wording to require the developer to meet all of the construction requirements of the airport owner and permit agencies.

New hangar move in

After all the hard work you and your team have put into this hangar project you are finally ready for the tenants to move in. In most cases you will be moving in tenants who signed up on a waiting list for those hangars. It is critical to manage this process in a professional manner. Administer the list fairly and consistently. Don't allow backroom deals.

Review your project cost economics to make sure the hangar rents will cover your costs. Also check that the airport owner's accounting department is ready to receive monthly payments from the tenants.

Notify the tenants on the list by mail or phone that they can move into the hangars. Remind them of the monthly rent and include any other fees that they will incur upon move in such as damage deposits. When the tenants are ready to move in have the rental or lease agreement ready for them to review and sign and obtain the appropriate insurance documentation from each tenant to protect the airport owner. After the tenants have moved in check to ensure that any punch list items are completed. This could include utilities, paint touch ups, or door adjustments.

If you work through the waiting list and still have vacancies, consider advertising the new hangar availability. Posting advertisements and talking to nearby flying clubs, FBOs, and airport managers can be useful. If you have filled the new hangars and still have people on a waiting list, continue to manage it as you did during the move-in process.

Private hangar developer: You or an airport owner representative should have an agreement in place about how to coordinate tenant move in with the private developer. You and the developer might have separate waiting lists if you have a combination of privately and airport-owned hangars. If all of the hangars are privately developed then the hangar owner usually manages move in.

During move in you should have an airport owner representative (usually the airport manager) available in case disagreements arise between the hangar developer and tenants on the waiting list. However, if the developer compiled and managed the waiting list, your capacity to resolve a disagreement will be limited.

Be certain that the developer does not allow renters to engage in activities that do not comply with airport zoning and building codes (i.e., running a business in a noncommercial zone or permitting nonaviation activity prohibited by airport operating standards).

CHECKLIST

- ✔ Obtain project design and funding
- ✔ Bid and award construction contract
- ✔ Construct hangars
- ✔ Complete hangar project and move in tenants

PROJECT EVALUATION

During the course of this project you probably gained new insight into airport operation, development, and hangar construction. It is important that your team passes this real-world knowledge on to others who might pursue construction projects at your airport. “Project Evaluation” focuses on capturing what was learned throughout the entire hangar project process. This will help ensure consistency in the operation of your airport and implementation of future airport development projects.

The two basic parts of project evaluation include checking to confirm your project economics are still valid and producing a record of the project. In Step Five you will track the financial performance of the airport (including new hangar operation), adjust rental rates as appropriate, debrief project participants, conduct an airport tenant opinion survey, and present a final project report to the airport owner decision makers.

Project economics

When the income stream starts flowing from the new hangars, closely review the monthly revenue and expense reports produced by the airport owner. Check your original estimates (produced during the first three steps of the guide) and confirm that the hangars are generating sufficient revenue to cover all of your expenses, including any new principle and interest payments. Don’t forget to include additional fuel sales revenue in the review.

Ideally you would be generating sufficient revenue to cover all of the operating expenses and financing costs, with enough to set some aside in a reserve fund. If the project is generating excess revenue, evaluate the reserve fund needs and adjust as appropriate.

If insufficient revenue is being generated, it may be necessary to increase the rental rates to cover the shortfall. Your standard rental/lease agreement may limit rent increases so take this into account when evaluating financial performance. It may take a few months to get a good handle on the situation but start tracking the airport finances early and often. Appendix I, “Airport Revenue and Expense Financial Analysis,” can be used to check the airport’s new financial state.

At a federally funded airport the FAA requires that airports charge fair market rental rates. The FAA also frowns upon charging rates that exceed fair market value and the agency could view such an act as unjust economic discrimination. For any consideration of adjustments in hangar rental rates it is extremely important to involve stakeholders early in the discussions.

Debrief project participants

An effective method for evaluating the project is to go back to your stakeholder analysis and conduct interviews with these individuals again. Now that the project is complete ask for their thoughts and suggestions about how to improve the process. Discuss the project approval process, the impact on schedule and cost, the impact on current airport businesses, tenants, and staff, and the level of satisfaction from key decision makers. You also should obtain input and reactions from the airport design engineering consultant, airport owner engineering staff, construction contractor, resident engineer, and airport owner representative.

Conduct airport tenant opinion survey

Many airport tenants (business owners and users) initially might not be included in the stakeholder debriefing but their input is no less important. An effective way to obtain their input is to conduct a short opinion survey. Limit the survey to 10 or fewer questions and use a simple scale (e.g., rank the level of satisfaction from 1-10). The easiest way to distribute the questionnaire is to mail a copy to all airport users who appear on the airport owner's records, including the new hangar tenants.

Tabulate the numerical results and consolidate the written comments. Then combine your stakeholder and tenant survey results to create a brief report for your key decision makers and airport tenants. (A Microsoft PowerPoint presentation is a simple and effective reporting method.) Because your decision makers and tenants took time to be interviewed or to complete an opinion survey, you owe them an opportunity to see the results. An airport users' meeting can be an effective venue for such a presentation. Sharing the results with the stakeholders and tenants fosters open communication and relationship building.

Provide copies of the final project report to the group responsible for airport management oversight, whether it is an individual, airport committee, or local government commission. They should have copies available for whoever becomes involved in the next airport development project. Your report and shared experiences should enable the next project team to complete their project more efficiently than if they were to start from scratch as you probably did.

Sample opinion survey questions

Did the construction phase of the project impact your use of the airport?
(1-10 scale, 1 being strongly disagree, 10 being strongly agree)

How did the project impact your use of the airport?
(Ask for a written response or provide a list of examples with boxes to check.)

This hangar project will benefit the airport.
(1-10 scale)
Explain why or why not.

Waiting list was well administered.
(1-10 scale)
Explain why or why not and provide some suggestions for future projects.

Tenant communication was sufficient.
(1-10 scale)
Explain why or why not.

Overall, how would you rate this project.
(1-10 scale)
Explain why.

What else would you like to see developed at the airport?

CHECKLIST

- ✔ Track financial performance of airport, including new hangar operation
- ✔ Adjust rental rates as appropriate
- ✔ Debrief project participants
- ✔ Conduct airport tenant opinion survey
- ✔ Provide final project report to airport owner decision makers

The project process in this guide have been tried and proven to work. It will provide you with many useful ideas, tools, and approaches to overcome the many obstacles involved with embarking on a hangar project at any GA airport.

AOPA Airport Support Network
Frederick, Maryland 21701 • 301-695-2200 • asn@aopa.org