



Airport Management Guide

Airport Operators

Volume 1, 2010

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FOREWORD

Tennessee's airports contribute billions of dollars annually to the state's economy and support tens of thousands of jobs in related industries. Tennessee's general aviation airports are the backbone of the State's airport system because they enable many community-based manufacturers and businesses to compete in the worldwide market.

This guide is provided for the airport sponsors and managers to assist them in their efforts to plan, manage, and operate their airport. The subjects included in the guide are not all inclusive and, for most subjects, contain only general information. The guide will either be expanded to incorporate user's comments and suggestions for some additional information and/ or eventually be reproduced as a more fully expanded Airport Management Manual which would have many more subjects and details. It will also have more references to related Advisory Circulars, Orders, etc., and appendices and graphic illustrations, charts, and exhibits.

This guide supersedes the previous Tennessee Airport Management Manual which was first distributed to the airport sponsors and managers in 1978. That manual was produced by Middle Tennessee State University under a grant from the Tennessee Department of Transportation, Bureau of Aeronautics. This guide follows along the lines of the previous edition and incorporates anything from that document which is still applicable today.



Tennessee Department of
Transportation, Aeronautics
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copy.

Tennessee airports are important components in our regional transportation system. We are at the crossroads of transportation activities in the United States in terms of air, water, rail and highways. Our aviation system is diverse, supporting the busiest air cargo airport in the world (which also just happens to enplane over 10 million passengers annually) to the smallest general aviation airport which is sustaining economic activity and growth in that county. In between are airports supporting thousands of pilots, flight operations, aviation businesses and personnel, each and every day. It is an aviation system Tennesseans can be proud of, connecting local economies to global economies.

We have always said that our airports are the “Front Door” to our communities. Each airport supports a wide variety of aviation and business activities. The economic engine of aviation is huge in Tennessee, in the billions of dollars in overall impact. In many instances, the local impact is felt the very first moment the airport user steps off the airplane and into that community.

This Airport Management Guide is intended to provide airport sponsors with information regarding an array of airport management subject matter. The guide includes sections on the benefits of your local airport, along with discussion on grant funding, airport planning, promotion and management.

Airport sponsors, authority and board members and others should read this guide. New airport officials will find this guide helpful in understanding state and federal grant assistance, project funding procedures and the obligations associated with accepting funding. Furthermore, this guide provides an overview of our office and procedures that every airport official should find helpful.

Although much of our previous Airport Sponsor Handbook has been incorporated, this guide does not provide specifics such as current Tennessee Aeronautics Commission membership or Aeronautics staff names and contract information. Time sensitive material such as this can be found on our ever expanding web page at www.tdot.state.tn.us/aeronautics/.

We continue to update and add to the information in this guide and welcome your ideas and comments on the contents. Please let us know if there is additional information you would like to see in the guide. We look forward to working with you in the planning, development and long term growth of your air transportation and business facility.

A. PURPOSE

The purpose of the Airport Sponsors Handbook is to inform airport sponsors of the programs and services provided by the Tennessee Department of Transportation (TDOT), Aeronautics Division, so that we may be of better service to the public.

B. AERONAUTICS MISSION STATEMENT

The mission of the Aeronautics Division is to provide Tennessee with a quality, integrated aviation system that is safe, efficient, economical and sensitive to environmental concerns, serve the needs of local communities; and provide state government with safe, professional, courteous flight services in an efficient, comfortable manner.

C. AERONAUTICS COMMISSION

The Tennessee Aeronautics Commission is made up of five members appointed by the Governor for a five-year term on a staggered basis of which at least one (1) but not more than two (2) shall live in each of the state's grand divisions. The Commission serves in an advisory capacity to the Commissioner of Transportation in the formulation of aviation policy and airport improvement projects. They are also charged with approving or disapproving all proposed changes in the state airport system plan.

D. AERONAUTICS ASSISTANCE & SERVICES

The TDOT Aeronautics Division is dedicated to providing technical assistance to airports within the Tennessee airport system. Our role is to provide a wide range of services to local governments, airport authorities and local airport managers. If we are unable to provide the technical assistance you need, we will work with you to find assistance.

E. STATE BLOCK GRANT PROGRAM

Tennessee is one of ten states in the nation selected to participate in the Federal

Aviation Administration (FAA) State Block Grant Program. As a participant in the program, Tennessee has the sole responsibility for deciding the distribution of federal funds for improvement projects at general aviation and non-primary commercial service airports. Primary benefits of the Block Grant Program are our ability to assess project justification based on local, regional and statewide conditions and to adapt state, federal and local funds to meet the immediate and future needs of our state aviation system.

As a participant, the Aeronautics Division is required by FAA to implement certain responsibilities previously undertaken by the FAA Memphis Airports District Office. The Division is responsible for determining the level of environmental analysis required for airport improvement projects and for approving environmental assessments and impact statements at general aviation and non-primary commercial service airports. The Division also provides technical assistance and coordination throughout the environmental process. As a FAA block grant state, the Aeronautics Division is responsible for coordinating and approving Airport Layout Plans, Airport Master Plans project eligibility and monitoring airport sponsors' compliance with the federal grant assurances.

F. ENGINEERING & PROGRAM DEVELOPMENT

The Engineering and Program Development Section of the Aeronautics Division provides technical assistance with project development and facility improvements. Assistance continues from project conception to completion. Services and assistance offered include, but are not limited to the following:

- Conduct preliminary surveys and cost estimates for project feasibility and funding
- Collect and review bids for complete information and prepare request form to initiate contract and/or grant

- Assist with project design development and production of plans and specifications for construction of general aviation airport projects (including runway, taxiway, apron expansions and extensions, hangars, access roads, lighting systems, heliports and fencing projects)
- Review designs prepared by consultants
- Assist with property acquisition preparation
- Provide assistance with construction administration

G. FINANCE & GRANT MANAGEMENT

Tennessee has been providing financial aid to its airports since 1930. In 1986, the Tennessee General Assembly adopted legislation that created the State Transportation Equity Fund. This fund allocates receipts from taxes collected from transportation fuels for distribution to airports, rail and waterways based upon their contribution to the fund. For aviation, these monies are administered by the Tennessee Department of Transportation (TDOT) with the advice and assistance of the Tennessee Aeronautics Commission. These funds are used for statewide grants to Tennessee air carrier and general aviation airports. Certain items are covered up to 90 percent of the total cost of airport projects, depending on the type of project.

The Budget and Grants Management Section assists airport sponsors with the financial aspects of proposed projects, coordinates all phases of federal grants and state contracts, reviews all project requests received from airport communities and processes invoices for payment.

The following includes more detailed responsibilities:

- Provides guidance and assistance in requesting state and federal subsidy
- Provides information on funding eligibility, guidelines and procedures
- Reviews all requests received for adequate and complete information
- Establishes all grants and contracts for execution
- Coordinates and establishes invoice

payment arrangement

- Reviews and processes all payment invoices for correctness, funding, eligibility and procedures
- Collects and reviews annual audits for findings and funding discrepancies on airport grants

H. PLANNING & PROGRAMMING

The Planning and Programming Section is primarily responsible



for aviation and airport planning, airport compliance, navigational aid coordination, automated weather system management and the inspection and licensing of airports. Specifically, this section:

- Coordinates and maintains all airport planning documents, including Airport Layout Plans and Capital Improvement Plan (ACIP).
- Maintains the Tennessee Airport System Plan:
<http://www.tdot.state.tn.us/aeronautics/>
- Licenses public landing areas that include airports, heliports, seaplane bases, etc.
- Ensures compliance with state licensing regulations, public landing areas are required to secure and maintain a public license. A site approval application form must be filed with the Division for all proposed public landing areas. Renewal of an existing public landing area license requires that the owner submit an updated license renewal application annually and meet the minimum standards. An inspection or survey is conducted annually, and a report is mailed to the owners outlining safety deficiencies. Airport safety inspectors work with public landing area owners to resolve any deficiencies. Data from the airport inspections may be provided to FAA to be used in the federal Airport Master Record (FAA form 5010) Program.
- Manages Tennessee's Automated Weather Observing Systems
These include AWOS units located at 40

- of Tennessee's general aviation airports.
- Assists with coordination of instrument approach procedures and navigational aids
- Produces the Aviation Newsletter
- Provides assistance with airport minimum standards and lease agreements
- Coordinates security plan development
- Assists with technical and operating requirements of landing and navigational aids, height limitation zoning ordinances, compatible land use planning on and off airport property, airport layout and master plans, economic impact, airport expansion, feasibility studies and coordination and review of the Federal 7460 and 7480 Forms
- Implements the FAA Compliance Program that is required by the State Block Grant Program for all publicly owned general aviation airports
Responsibilities include (1) reviewing the compliance status of each recipient of federal funds prior to grant execution, (2) coordinating with the FAA to ensure that each recipient is in compliance with federal grant assurances, and (3) assisting parties with informal dispute resolution.

I. FLIGHT SERVICES

The Flight Services Section of the Aeronautics Division provides safe, professional and courteous flight services to all branches of state government.



In conjunction with the Aerial Surveys Division of TDOT, Flight Services operates an aircraft for aerial photogrammetry. The Aeronautics Division uses the airport aerial photographs for planning and engineering work. Aerial photographs are also used in

site selection and planning for highway improvement projects. The photographs are used to create topographic maps for the design of various highway projects, document the progress of such projects and produce county maps.

J. STATE ASSISTED PROGRAMS

1.0 Aerospace Education Workshop



The primary purpose of the Aerospace Education Program is to provide an opportunity for Tennessee teachers, in all grade levels, to expand their skills and knowledge to develop aerospace concepts in their respective schools and classrooms.

The Tennessee Department of Transportation, Aeronautics Division, sponsors four basic Aerospace Education Workshops in Tennessee. In addition to the Basic Aerospace Education Workshop, two annual Advanced Aerospace Education Workshops are sponsored by the state and rotate among the universities.

2.0 Airport Maintenance Program

Eligible Uses

The Airport Maintenance Program was established to assist airport sponsors with partial costs associated with



maintaining and operating publicly owned, public use airports. Airport sponsors must annually execute a state/local Airport Maintenance Contract as part of this program. Contact the Budget and Grants section for more information on contract reimbursement and eligible items.

Following are some of the items eligible for reimbursement under the program:

- Preventative maintenance and repair or replacement of buildings, equipment, navigational aids, lighting systems, pavements and other property or facilities necessary for the safe and efficient functioning of the airport



- Mowing services, landscaping or related work on airport property
- Periodic testing or inspection of underground fuel storage tanks as necessary to comply with federal or state regulations
- Unicom and other radio equipment, airport signage and fire extinguishers
- Installation and subscription to an aviation flight planning satellite weather system, i.e. DTN, WSI or Pan Am Weather systems. See K3.0 for state funding participation details.



Ineligible Uses

- Utility or telephone bills
- On-line service charges except for aviation weather related programs
- Federal, state or local taxes or fees (other than sales taxes)
- Maintenance of facilities or equipment not owned by the airport sponsor (city, county, airport authority)
- Maintenance of aircraft, automobiles, pickup trucks or other passenger vehicles
- Maintenance of facilities or equipment not located on airport property
- Work that an FBO or other third party is required to perform under a contract with the airport sponsor.

Limits

TDOT will reimburse one-half (50%) of actual documented costs, not to exceed the limiting amount of the airport's maintenance contract.

Procedures for Payment

TDOT will provide reimbursement upon receipt of (1) an original and one copy of an itemized statement, (2) certification that purchases were in accordance with local procurement regulations, and (3) one copy of documentation of each itemized expense and corresponding payment. The request for reimbursement must be signed by an authorized representative of the airport sponsor(s) and must be received no later than September 15 each year for the prior fiscal year's expenses.

3.0 Approach Clearing



All airports owned by public agencies (cities, counties, airport authorities/boards) and private airports open to the public are eligible to participate in the Approach Clearing Program. TDOT's Aeronautics Division will reimburse airport owners 90 percent of the costs required to clear approaches or remove obstructions within runway safety areas and approach zones to comply with state and/or FAA standards. Funding at 90 percent state participation is also accessible to purchase aviation easements or to purchase land in fee simple in the airport RPZ. Funding for obstruction clearing and trimming in the side transitional surfaces is eligible at 50 percent state participation.

All incidentals (surveys, appraisals, filing fees, etc.) that are associated with land acquisition are eligible for 90 percent reimbursement from the state. Projects must always receive approval before initiating any clearing, obstruction removal and land or easement purchases in order to be eligible for 90 percent financial reimbursement.

4.0 Automated Weather Observing Systems

The Automated Weather Observing System (AWOS) automatically broadcasts weather reports to enable pilots to make takeoff and landing decisions based on up-to-the-minute weather conditions. The systems are designed to promote pilot safety and provide on-site weather information at general aviation airports.

The AWOS constantly monitors weather conditions such as wind direction and speed, temperature, relative humidity, cloud height, visibility and density altitude. A



voice synthesizer broadcasts the current information on designated radio frequencies. Selection of sites to receive an AWOS unit is based on a priority system with consideration given to the number of based aircraft, instrument approaches, Part 135, 137 or 141 or corporate traffic, terrain, runway length and the distance to the nearest altimeter source.

It is important that the airport sponsor ensures that the AWOS ceilometers windows are cleaned weekly. Do not clean with abrasives, rather use a "chem wipe" with denatured alcohol. Repeat and wipe dry.

5.0 Civil Air Patrol



The Civil Air Patrol (CAP) is an aviation-oriented volunteer organization. The Tennessee Department of Transportation, Aeronautics Division, sponsors Tennessee's CAP annual operating budget, which is submitted to the department for review and approval annually. The three primary

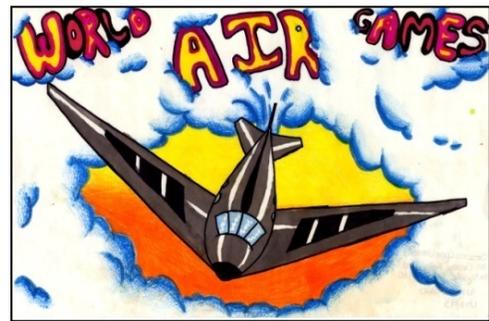
mission elements of the CAP are:

- Emergency Services - search and rescue, disaster relief, civil defense
- Aerospace Education - help keep the public informed of vital aerospace issues
- Cadet Program - designed to build character and inspire youth leadership through an interest in aviation



6.0 Art Contest

Each year TDOT Aeronautics sponsors an Aviation Art Contest. The contest is to encourage young people to display their creativity and introduce them to the fascinating world of aerospace and aviation. Winners receive a certificate, plaque, savings bond and airplane ride.



SECTION 3

FUNDING ASSISTANCE

A. APPLYING FOR FUNDING ASSISTANCE

1.0 Application Procedures

All applications for state assistance for airport improvement projects must be submitted by the airport sponsor with an assurance that local matching funds are available. Applications will be reviewed in accordance with the following procedures:

Applications received by the third Friday of each month will be reviewed by the Aeronautics Division staff during the following week and submitted to the Commissioner of Transportation for approval, disapproval or referral to the Tennessee Aeronautics Commission (TAC) for their review and recommendation.

If the application is referred to TAC, the airport sponsor will be asked to present the request at the next scheduled commission meeting. These meetings are generally held quarterly, beginning in February. The commission's recommendation will be forwarded to the Commissioner of Transportation for his decision.

Note: If the most recent airport inspection conducted by the Aeronautics Division identified safety deficiencies, provide a plan of action to resolve the deficiencies and describe the progress-to-date.

Use the following sample Funding Request Letter and Application as a guide. Also, include a sketch of the proposed project with your application.

Step by Step

1. Ensure project is shown on current ALP.
2. Ensure project is listed in current ACIP.
3. Ensure local share is available and ready to be forwarded with contract.
4. Prepare cover letter on local letterhead signed by airport sponsor.
5. A fully executed contract will not be returned until all requested local share funds are received by the state. This does not apply to reimbursable contracts.
6. Complete application form; attach project sketch and engineering estimate if available.

Application Form [Use a separate application for each requested improvement.]

<p>1. APPLICANT INFORMATION: [Provide the airport name, legal name of the applicant (e.g., XYZ Airport Authority, City of XYZ, County of XYZ and name and phone number for the person(s) that should be contacted if additional information is needed.)]</p> <p style="text-align: right;">Date _____</p> <p>Airport _____</p> <p>Applicant _____</p> <p>Contact Person _____ Phone _____</p>
<p>2. PROJECT DESCRIPTION: [Describe the proposed improvement, including as much information as possible (dimensions, quantities, etc.).]</p>
<p>3. Give project description from ACIP along with the proposed date.</p> <p>This project is listed in our ACIP as _____, Date _____</p>
<p>4. EXPLANATION OF NEED: [Explain the need for the improvement, including expected benefits and/or problems that would be solved by the improvement.]</p> <p>We plan on funding this project as _____ Reimbursement or _____ State or Fed/Local Share.</p>
<p>5. ESTIMATED COST: [Indicate the total estimated cost of the improvement and show the requested amount of state and local funding. Attach an itemized cost estimate.]</p> <p>State \$ _____ (%)</p> <p>Local \$ _____ (%)</p> <p>Federal \$ _____ (%)</p> <p>Total \$ _____ (100 %)</p>
<p>6. COMMENTS: [Use this space to provide additional information that you feel should be considered in evaluating your request for financial assistance.]</p>

TDOT USE ONLY

Sample Funding Request Letter

(DATE)

(Name of TN Aeronautics Division Director), Director
Tennessee Department of Transportation
Aeronautics Division
P. O. Box 17326
Nashville, Tennessee 37217

Dear (Mr./Ms. Last Name of TAD Director):

The (Airport Authority/Board or City and/or County) hereby requests financial assistance from the Tennessee Department of Transportation in the amount of \$(XX,XXX.XX) for improvements at the (Name of Airport). The requested improvements include:

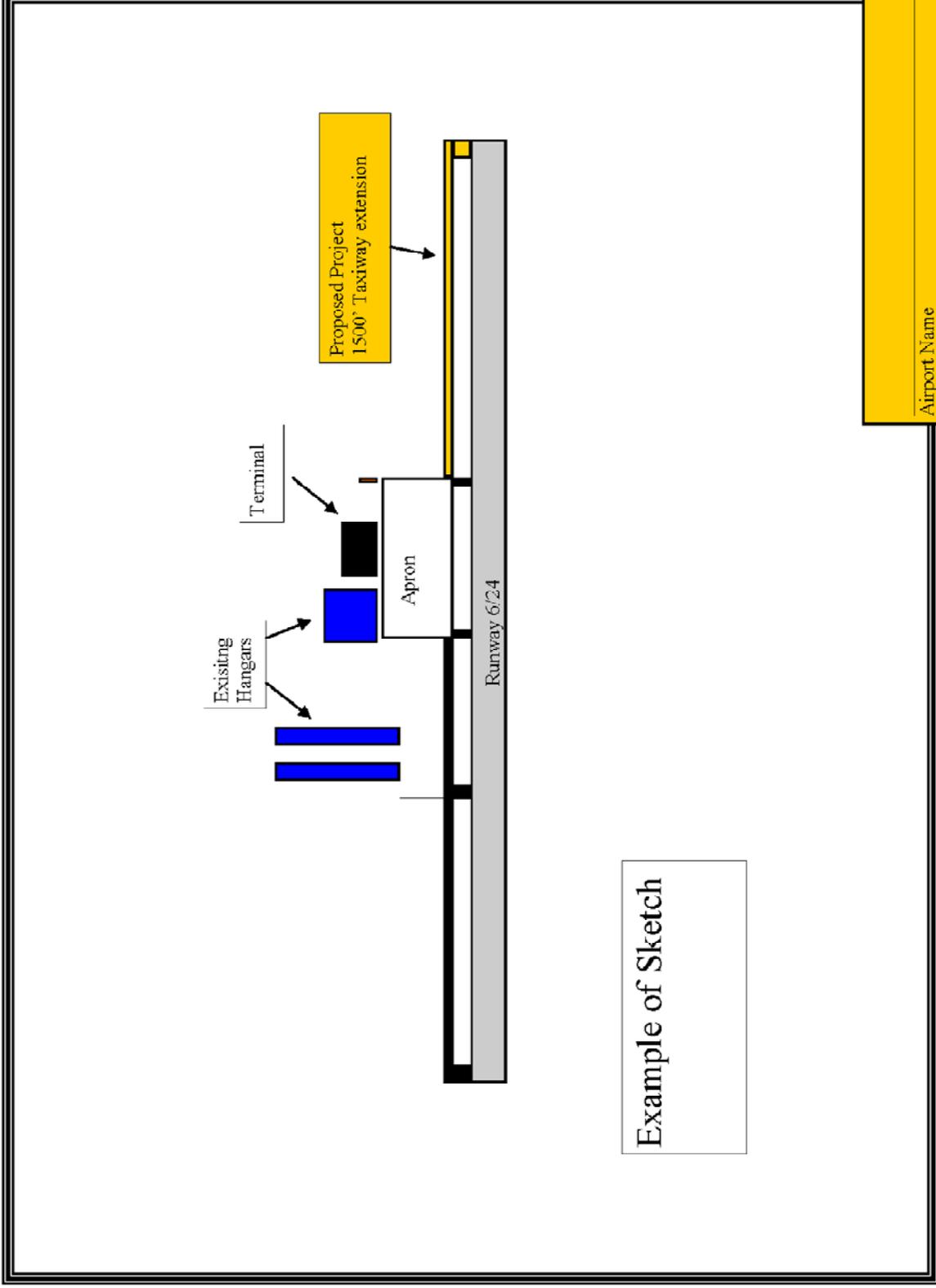
1. (Itemize and attach separate application form for each project.)
- 2.
- 3.
- 4.

Attached is a completed application for state financial assistance for each of the improvements. We have available the necessary funds for the local share of the proposed improvements. I am authorized to provide additional information or assurances associated with this request.

Please let me know if you have any questions or need additional information.

Sincerely,

(Authority/Board Chairman, City Mayor and/or County Mayor)



Example of Sketch

Airport Name _____
Date _____

5.0 Project Funding Procedures

Information to Be Provided - To ensure prompt action, it is important that airport sponsors provide all required information with the request for state funding. Incomplete requests may be deferred. The Aeronautics Division can assist sponsors in defining project development and preparing preliminary engineering cost estimates. Requests for such assistance should be made far in advance of the project funding request.

Routine Projects - Funding requests for routine projects will be considered by the Aeronautics Division without review by the Tennessee Aeronautics Commission. Routine projects should meet the following criteria: (1) the need is well-documented, (2) the eligibility for state assistance is clear, (3) local matching funds are available, (4) the total project cost is less than \$100,000 and (5) the project does not represent a change of funding policy.

Non-Routine Projects - Projects that do not meet the criteria for a routine project or are over \$100,000 will be submitted to Tennessee Aeronautics, who will refer the project to the Tennessee Aeronautics Commission for consideration at their next scheduled meeting. The Aeronautics Commission will recommend funding approval or denial to the TDOT Commissioner. Generally, airport sponsors will be asked to appear before the commission to present their request for project funding and justify the need for the project.

Emergency Projects - In case of an emergency project, the sponsor should immediately contact the Aeronautics Division to request permission to start the project. The routine project funding procedures, described above, will be followed, and a recommendation will be submitted to the TDOT Commissioner for approval. It should be noted the request for approval is to start the project and not a guarantee of approval for project funding.

Assistance Available - The Aeronautics Division can assist with project

development, preliminary engineering, cost estimates, etc., and applicants are encouraged to request such assistance as far in advance as possible. Applicants are also encouraged to contact the Aeronautics Division in advance if the eligibility for state funding is uncertain.

6.0 Eligible Projects and State Funding Participation

Projects eligible for state funding and the percentage of the state matching participation are summarized below. Each request for funding is evaluated on the basis of demonstrated need, consistency with state and local plans, compliance with state licensing standards, availability of funds and any unique circumstances. Airport sponsors are strongly encouraged to contact the Aeronautics Division prior to submitting a formal request for funding. It should be noted the funding percentage may change if incidental to primary project.

Safety & Security Projects (90 Percent State) (Some items are capped)

- Security Fencing and Gates
- Signage to Alert the Public of Restricted Areas
- Security Lights and/or Motion Sensor Lights Around the Terminal
- Airport Video Monitoring Equipment
- Tree Trimming and Obstruction Clearing (RSA, RPZ, OFA)
- Land Acquisition (RPZ, RSA, OFA, Runway Extension and Parallel Taxiway)
- Taxiway, Taxiway Lighting
- Obstruction Lighting
- Environmental Assessment Master and Airport Layout Plans (or Eng. Drawings), Feasibility or Obstruction Analysis Studies
- Airfield Pavement Maintenance & Repairs
- Runway and Runway Lighting
- Runway Safety Area; Runway Protection Zone Improvements
- Tee Hangar Design, Site Plans and Inspection
- Building Demolition (in RSA/RPZ)
- Aircraft Parking Aprons

Airside Improvements And Enhancements
(75 Percent State)

- Automated Weather Systems (AWOS/3 or AWOS/AV)
- Approach NAVAIDS (ODALS)
- Terminal Electronic Navigational Aids (NDB, Localizer, DME)
- ARFF Vehicles (Limited to Part 139 Certified Airports)
- Grounds Maintenance Equipment



Grounds maintenance equipment is eligible for publicly-owned GA airports at a 75% state/25% local funding percentage share (capped at \$60,000 state funds). Eligible equipment includes tractor, bush hog type or finish mower, and tractor mounted loader, spray or fertilizer equipment. GA airports are limited to one funding request for grounds maintenance equipment every six years and must adhere to policy stipulations. Sponsors must agree to limit use of equipment to airport property only. Air carrier airports will utilize their TEF set-a-side funding for this purpose.

Landside Improvements And Enhancements
(50 Percent State)

- Land for Future Airport Development
- Maintenance Hangar (per TAC policy)
- Fuel Farms (new, upgrade, relocate)
- Access Roads (on airport property)
- Utilities
- Obstruction Clearing (outside transitional surfaces)
- Auto Parking Lots
- Terminal Building. Participation is at a cost share of 50%, not to exceed \$350,000 state participation.

Note: Mobile Equipment is ineligible, except for reimbursement under maintenance contract.

Time Limit for Securing Funds - Airport owners have a maximum time to secure Transportation Equity Funding against a project - the fiscal year project is proposed plus two additional fiscal years. A project must be started within the above time frame, or dollars will revert back to the Transportation Equity Fund and be made available for other aviation approved projects. Once the contract has been executed, the airport owner can select a contractor or vendor for the project. Policy will apply to all categories of airports.

7.0 Project Implementation Process

Step No. 1 Project approval officially begins when the Commissioner of Transportation approves state funding assistance for the requested project. A follow-up from the Aeronautics Division provides information about (1) a project staff assignment and (2) project implementation guidelines.

Step No. 2 If required for the project, engineering design is performed with plans and specifications developed for the purpose of obtaining competitive bids.

Step No. 3 Sponsor follows own approved purchasing procedures (for projects less than \$25,000 total) or bid procedures to obtain competitive bids for the work or items involved in the project. On land acquisition projects, all appraisals must be conducted by a TDOT certified appraiser and appraisal approved by TDOT's Right-of-Way Division.

Step No. 4 Sponsor receives bids and forwards to Aeronautics Division for review and recommendation of award of contract.

Step No. 5 The Aeronautics Division prepares the contract and sends it to the sponsor for signing.

Step No. 6 Sponsor and sponsor attorney signs contract and returns to Aeronautics Division for state signatures.

Step No. 7 During the contract execution

stage, if the sponsor is requested to send TDOT the local match on the project, the sponsor needs to follow through with setting up their funds by one of the following means:

- a) Irrevocable Letter-of-Credit
- b) Check
- c) Local Government Investment Pool

Step No. 8 State signatures are obtained after which an original signed contract is supplied to the sponsor by the Aeronautics Division.

Step No. 9 Work may commence.

Note: A fully executed contract MUST BE RECEIVED BEFORE ANY WORK COMMENCES.

Step No. 10 Once a bill has been paid by sponsor, a sponsor invoice plus one copy of receipted invoices from the vendor(s) or canceled check(s) can be sent to the Aeronautics Division for state reimbursement at any time during the project.

A. GENERAL AVIATION



The term "General Aviation (GA)" refers to all civil aviation activity except that of the certified air carriers and the military. Together, general aviation and the certified air carriers make up America's balanced air transportation system, which is the safest and most efficient aviation network in the world.

Air service in the United States is available to almost everyone because the airlines and general aviation fulfill separate, but compatible transportation roles. General aviation comprises five basic categories or types of flying: business, commercial, personal, instructional and special purpose.

Aircraft have become increasingly important business tools in recent years as American industry has decentralized and moved many operations away from metropolitan areas. Today, thousands of firms own GA aircraft to carry out their business more efficiently and profitably, and many more thousands of businesses regularly charter or rent aircraft. A fairly recent trend (last 10 years) has been the rise of what is known as fractional ownership.

The commercial category of general aviation includes mainly some on-demand air charter operations. These operators link small and large communities with each other and with metropolitan centers.

Personal and instructional flying are important parts of general aviation. Hundreds of thousands of men and women have discovered the fun and freedom of

learning to fly. Flying their own aircraft to destinations increases their leisure time and business activities.

The special purpose category covers a broad range of activities such as aerial photography, emergency medical services, logging, fire control, pipeline patrol, traffic surveillance, etc. The transportation benefits and flexibility of general aviation have frequently been demonstrated in times of natural disasters such as floods, hurricanes and earthquakes.

1.0 Public Benefits of Aviation

There are many public benefits derived from general aviation. In fact, because of aviation's vast, immeasurable impact on the U.S. economy and our way of life, everyone benefits from the nation's air transportation system, even those who don't use it directly.

General aviation aircraft and the airports they use pump millions of dollars into



the regional economic development because of their role in supporting local industry and business. Regional planners recognize the importance of airports in generating economic growth, and industrial development consultants often cite the lack of an adequate airport as a chief reason for by-passing a community as a site for a new plant or business. Along with its public benefits and transportation role, general aviation is also a good neighbor. New technology in aircraft and engine design has significantly reduced operational noise, and tomorrow's planes will be even quieter.

Air pollution, another major concern of communities large and small, is virtually non-existent with general aviation. More than 90 percent of all GA flying is above

3,000 feet where emissions are negligible and do not affect the breathable atmosphere. Sulfur oxides, considered the most harmful pollutants, are refined out of GA fuels, and aircraft engines are more efficient, cleaner and better maintained than other types of transportation engines.

2.0 Airports Are the Key



Before a community can expect to enjoy the benefits of modern transportation, economic enrichment or industrial development inherent in the GA system, it must be willing to develop and actively support a modern, well operated airport. GA aircraft do not require the longer and wider runways or security and passenger operational areas as needed for heavy commercial aircraft. Neither do they require the expensive, complex radio and radar guidance systems or the elaborate servicing facilities of air carrier airports. Even the most modest activity does, however, require well planned, well managed facilities in keeping with its role as an integral part of the nation's and state's air transportation system.

In Tennessee, nearly all general aviation airports are operated as public facilities by county or municipal governments with financial assistance from the state of Tennessee and the federal government. Historically, Tennessee has always been a leader in general aviation and the development of airports. Many of the things that were instituted by the federal government were actually preceded by one or more years of similar action in Tennessee i.e., organization of aviation development in 1937 and state aid to airports in 1939 which preceded the Federal Airport Act of 1946.

Throughout the years, the state has provided aid in building more than 74 public owned airports of which 68 are general

aviation in communities that were interested in economic development. The public owned airports are fairly well distributed in East, Middle and West Tennessee. Most of the public airports in Tennessee have satisfactory physical facilities and are well located. However, a number of these potentially excellent facilities suffer from what might be considered benign neglect; do not have the wholehearted support of the general public, have not contributed to attracting new industry and are treated as liabilities rather than the assets they truly are. In some instances, these conditions may be attributed to a lack of specific local, managerial experience in the area of airport operations. This guide is provided to assist the airport sponsor find the assistance needed to enhance the administration, planning, operating and controlling of those important public assets we call community airports.

3.0 Why Have An Airport?

During the early history of aviation, the only apparent reason for an airport was to provide the itinerant "barnstormer" a place to land. There was little commercial application for flying. Business or recreation provided the only justification for an airfield. Unfortunately, a number of people still hold this outmoded view.



Studies have been conducted to see what impact airports really have on a community. One such study is called the Tennessee Airport System Plan. This study, approved by TAC in November of 2001, looked at the future of the airport system and developed a method of prioritizing capital improvements to ensure that Tennessee airports continue to meet state and regional air transportation and economic development needs. Chapter seven of the system plan looked at the economic impact of airports on the market they serve (and vice-versa). The study's

perspective varied greatly from typical airport economic impact studies that measured airport jobs and expenditures based on the number of visitors that fly in and out. In this study, economic impact refers to the ability of an airport to positively affect its service area's economy.

In the first issue of the TDOT System Plan Update newsletter, it states that "General aviation airports, which are usually owned by local communities or sponsors, are the backbone of Tennessee's airport system.

These airports are scattered throughout the state and enable many community-based manufactures and businesses to compete in the worldwide market. The extensive airport system in Tennessee actually contributes about \$3 billion annually to the state's economy and supports 49,000 jobs in related industries including air freight, aeronautical manufacturing and testing, and operations."

4.0 Impact of the Airport



It has been argued that airports and GA services are a necessity if a small city or town is

to expand or retain its present industrial base. Since many small towns believe that industrialization is the answer to their problems, they may be led to invest their development efforts in aviation facilities rather than in other areas. The arguments in favor of aviation development and the likely consequences of industrialization should be considered by any town seeking revitalization.

The problems of small towns which lead them to seek new industry are generally the result of the trends toward the mechanization of agriculture and the urbanization of the population. The resulting declining population is bad for business. Local businesses leave, thereby

degrading the quality of rural life and making the cities more attractive for those who remain. As the population of the countryside declines, local industries may leave if they depend on local markets. Communities believe that added industry would attract new population, increase the tax base and create more disposable income, all of which would improve the social and economic quality of life.

Proponents of general aviation argue that the availability of air transportation will promote economic growth by (1) attracting new industry, (2) helping established businesses and industry expand (thereby employing surplus farm labor), and (3) retaining present industry. This view is based on the expanding use of business aircraft and on the trend of industry to avoid the central cities. Evidence in Tennessee has shown that soundly managed airports do attract business and industry, promote tourism, enhance transportation and positively influence the life of the community. Tennessee is one of the leaders in the improvement of general aviation airports, and these airports are a prime factor in attracting new industry. Communities which have active, effectively managed and well supported airports do, in fact, realize the economic and social benefits of their community airport.



B. THE AIRPORT AND THE COMMUNITY

Several airport communities have extensive ongoing programs for the development of industrial parks on or near airport properties. These communities attract new industry which creates new jobs and increases the tax base for additional revenues. These new industries and jobs

make it possible to attract and keep people in the area.

Airports also generate revenues from direct aviation activities. The ability of the airport to produce revenues is dependent upon how extensive it has been developed. Many communities are deficient in airport development because they have not been able to raise enough investment capital for improvement of airport properties. Many local airports are in need of aircraft storage hangars, and some are in need of large general purpose hangars for the purpose of developing the additional services that are necessary to make an airport a viable economic asset to the community.

A majority of the counties are looking to improve their facilities so they can service larger aircraft. During the early development of Tennessee's present airport system, runways of 3400 to 4000 feet were adequate to meet the needs of aircraft that were being used at that time (15 to 20 years ago).

However, today we see in many instances the need for 5,000 foot runways to handle the modern jet powered aircraft.

Improvements of runway, taxiway, ramp and area lighting are essential for safe and efficient 24-hour airport operation. The addition of a jet fueling capability could provide a needed service for these business aircraft.

Some fixed base operators could sell additional aircraft if hangar facilities were available for housing these aircraft. This



means lost revenue for the FBO and in turn, lost taxes for the local government.



These locally sold aircraft are generally used by business or industry in the community which increases the tax base and creates new job opportunities. Due to the high cost of today's aircraft, individuals and small businesses normally purchase them for a utility or function role, not just for pleasure. All communities appear optimistic that their programs are going to create benefits for the citizens of their area. In view of these developments, the future of general aviation airports in Tennessee is an optimistic one.

Administration of Tennessee's airports is accomplished by various types of organizations. Most of the state's general aviation airports are city/county owned facilities. The supervisory organization is different at almost every airport. The local community must evaluate its position and select the organization they believe will be best for their community. It is essential that all persons involved with the administration of airports have a common goal. This goal is one where the best airport and service can be developed to reflect the will and pride of the community.

A. AIRPORT PLANNING

One of the key responsibilities of the airport sponsor that cannot be delegated is that of airport planning. It is sad to see an airport too small to adequately serve its community with no ability to expand.



Conversely, similar issues arise from an airport that is over developed, one so big, complex and expensive that the city can never really catch up to it. In either case, the public loses interest in supporting the airport, and it often becomes an economic drain rather than an asset. Fortunately, such situations can be avoided by good planning.

In the TDOT Aeronautics Division, the Planning and Programming Office assists sponsors with their airport planning responsibilities. The TDOT Aeronautics Division concerns itself with statewide systems planning activities including inventory information, system capabilities, master plan recommendations, airport layout plan updates, airport capital improvement programming and budgetary impacts. New airports, as well as improvements to existing facilities, must be evaluated with respect to overall objectives of the statewide airport systems plan, federal and state policies and guidelines. The TDOT Aeronautics Division, on the other hand, works directly with individual city/county sponsors relative to individual airport short-term and long-term needs. This section of the handbook concentrates on the ongoing, developmental planning needed for existing, operating airports.

1.0 Master and Airport Layout Plans

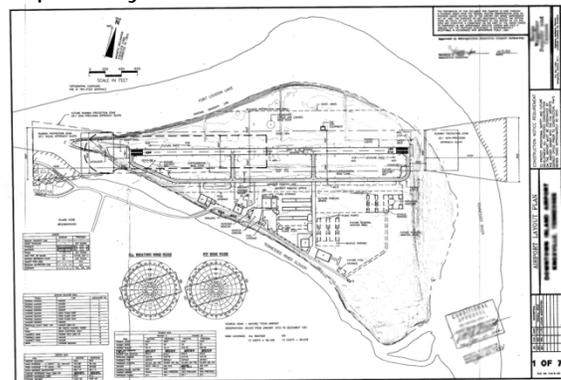
An airport master plan is a comprehensive study of an airport and usually describes the short, medium and long term development plan to meet future aviation demands (FAA-

AC 150/5070-6, Airport Master Plans). As a general rule, master plan studies are completed at air carrier airports, for proposed new/replacement airports and a few GA airports with significant based aircraft or operations. In most instances, however, an Airport Layout Plan (ALP) set update is the most likely planning document that will be developed, instead of a full Master Plan.

Although the term "Master Planning" has been used in various ways, it has generally come to mean a formal process in which the community's aviation needs for 5, 10 years are determined, land use plans formalized, ecology examined and expansion plans completed. Funds are generally available from federal and state sources to enable the city/county to have an airport master plan completed.

A well thought out master plan or airport layout plan set would consider not only land use, but also the airspace usage. Airport sponsors should contact the Aeronautics Division to start an airport planning process.

An Airport Layout Plan is defined as a scaled drawing of existing and proposed land and facilities necessary for the operation and development of the airport. See example below of airport layout drawing, part of the Airport Layout Plan set.



ALP's help to preclude many problems associated with airport planning. ALP's are the main tool in communication and agreement between the airport owner and

the FAA. The ALP set, which must be updated every 5-10 years, is an important part in airport planning. The ALP set includes up to seven separate large scale drawings and a cover sheet. Airport sponsors should contact the Aeronautics Division to start the ALP planning process. The state and FAA must conditionally approve an airport's ALP prior to its adoption. The process can take several months to go through the review and approval process.

2.0 Developmental Planning



Developmental planning is the detailed, day-to-day process which follows and is based upon a completed master plan or Airport Layout Plan (ALP) set update. In a general sense, this planning process is designed to ensure that guidelines are met, funds are procured and properly expended, ongoing work meets specifications and the like. Much like strategic business planning, this next step guides you in formulating budgets (locally) through communications with community officials and building support for the airport's financial plan. It is vital that this planning be conducted or at least reviewed annually by the airport board/committee or authority and with the appropriate local executives. Because guidance and strong support at the local level are key to the development of the airport, this function must be completed by the sponsor and not by the airport manager or fixed base operator.

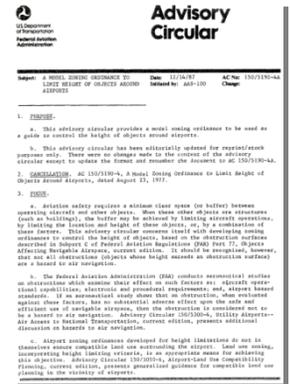
Examples of information and reports that would be invaluable for strong developmental planning would be:

- Latest airport inspection report
- Monthly/annual airport cash flow report addressing rents, leases, fuel flowage fees and other airport revenue sources
- Monthly/annual airport expense and outflow report

- Rents, charges and lease/rates policy
- Market service area assessments/cargo market studies
- Annual airport based and itinerant user feedback surveys
- Local community growth plans, population and employment trends
- Business and Chamber reports that might impact business aircraft usage
- Community budget report
- Goals and objectives list
- Airport Capital Improvement

3.0 Airport and Airspace Protection

One of the most important roles of the airport sponsor (city/county or authority) in relation to the community airport is the protection of the airport's required airspace from encroachment and incompatible land use development. It is recognized that airport zoning (height, land use) can create some conflicts within the community, but it is a problem that must be faced and dealt with at a very early date.



Airport sponsors who accept federal grants for the improvement of their airport are bound, through Grant Assurances, to take appropriate action to protect the terminal airspace (instrument and visual operations) through hazard removal and mitigation. (FAA Grant Assurance, number 20).

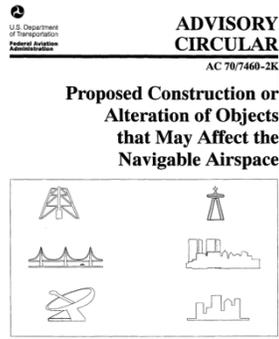
Encroachment into the terminal airspace can involve a variety of structures and/or towers. Examples can include such things as smokestacks, cell/TV towers, water towers, skyscrapers, power transmission, and other large structures which might impact the approach surfaces around the airport. Construction of multi-lane highways off ends of runways which incorporate lighting structures can not only introduce tall structures into instrument approach procedure surfaces, but may also create light hazards for pilots operating aircraft at night.

Most Airport Layout Plan sets include an airspace drawing. This drawing is a two-dimensional representation of the Imaginary Airport Surfaces as identified in Part 77 of the Federal Aviation Regulations (FAR). Adopting and enforcing an airport height zoning ordinance (incorporating the airspace drawing) can partially protect the airspace around the airport. Sponsors should also review and utilize the FAA form 7460-1, "Notice of Proposed Construction or Alteration."

Zoning ordinances should be evaluated so that developments around the airport will not be permitted to infringe upon the landing rights, safety area or obstruction clearance altitude.

Special attention should be given to AC 150/5190-4, "A Model Zoning Ordinance to Limit Height of Objects Around Airports." This advisory circular concerns itself with developing zoning described in Subpart C of the Federal Aviation Regulations (FAR) Part 77, "Objects Affecting Navigable Airspace." As stated in AC 150/5190-4, "Airports zoning ordinances developed for height limitations do not in themselves ensure compatible land use surrounding the airport. Land use zoning, incorporating height limiting criteria, is an appropriate means for achieving this objective."

Proposed airport plans should also be designed to anticipate expected airport expansion to meet community needs as far out as 20 years into the future. The airport sponsor is also bound (through the Grant Assurances) to take appropriate action to protect the airport by restricting the use of land adjacent to and in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations. (FAA Grant Assurance, number 21). All forms and advisory circulars referenced in this section can be downloaded from FAA's website, www.faa.gov.



4.0 Land Use Compatibility

Airport sponsors should consider and include land use drawings when updating their ALP sets. There are four drawings in a typical ALP set which can aid the sponsor and address land use compatibility. Those drawings include: the Airport Layout Drawing (ALD), the Airspace and Land Use Drawings and the Airport Property Map. Each drawing provides vital pieces of information which will assist the reviewer in understanding the imaginary surfaces and safety areas around the airport. A Land Use Drawing consists of the following types of information:

- Airport features & approximate airport boundaries
- Land uses identified on & off airport
- Public facilities (schools, parks, etc.)
- Legend
- Airport Impact Zone (future)
- Notations showing any recommended land use changes, ordinances/ statues, etc.



Airport sponsors should also work and coordinate the airport's land use plans with others in the community. In order to accomplish that, the following actions should be taken:

- Obtain local/community/county land use zoning plans.
- Work with local planning, zoning and community leaders to educate and ensure surrounding compatible land use.
- Coordinate airport development plans with local/regional planning officials.
- Monitor community and countywide zoning actions.

Schools, hospitals or similar public buildings should not be constructed near the airport because of the incompatibility of their functions and aviation operations.

When considering proposed off-airport land



uses, airport operators, local planners and developers must factor in whether or not the proposed land uses will increase wildlife hazards. Land-use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife strikes. The FAA recommends minimum separation distances based on three criteria: (1) flight patterns of piston-powered aircraft and turbine-powered aircraft, (2) the altitude at which the majority of strikes occur, and (3) National Transportation Safety Board (NTSB) recommendations. It has been estimated that 78 percent of strikes occur less than 1,000 feet, and 90 percent occur less than 3,000 feet above ground level. To help prevent hazardous wildlife occurrences, the Federal Aviation Administration recommends airport operators adhere to the criteria in Advisory Circular number 150/5200-33, "Hazardous Wildlife Attractants on or Near Airports."

The FAA Airports Division produced a guide for effective land use planning titled "Land Use Compatibility and Airports," dated September 1999.

Its stated objective is "to provide information on FAA programs and sources of support and to promote an understanding of land use compatibility planning issues around airports." It is an excellent source of information, particularly for airports that do not have their own planning staffs. Both the sponsor and airport manager need to understand land use compatibility issues and land use regulations. The guide can be viewed or downloaded from FAA's website, www.faa.gov.

5.0 Land Acquisition

The Aeronautics Division provides assistance in the process of land acquisition around airports. The first priority is to ensure your

airport has an approved Airport Layout Plan (ALP) showing all the property around the airport boundary which is planned for acquisition.

Land acquisition using federal or state funding assistance should follow FAA guidelines and regulations detailed in AC 150/ 5100-17, "Land Acquisition and Relocations Assistance for Airport Improvement Projects (AIP)." This AC presents generalized guidance for compatible land use planning in the vicinity of airports. Additionally, guidance regarding state procedures should be sought from TDOT Aeronautics prior to any acquisition.

6.0 Pavement Management Program

A pavement management program basically consists of guidelines and procedures for the management and maintenance of airport pavements.



The program is designed to assist airport sponsors and their airport personnel in the timely decision process of pavement maintenance and rehabilitation utilizing the Airport Pavement Management System (APMS) methodology.

There are two different levels of pavement management. The first level of pavement management will involve the most active participation of the airport sponsor when establishing a proper airport pavement management program. The second level will involve the airport manager in the performance of a regularly scheduled inspection of pavement areas. More details concerning the manager's daily pavement inspection activity is discussed in Volume II.

There are two FAA advisory circulars concerning the establishment of an Airport Pavement Management System (APMS). AC

150/5380-7A, "Airport Pavement Management Program," is designed to assist airport sponsors in the decision making process about both short and long-term planning for pavement maintenance and rehabilitation (M&R). This AC provides the best source of information to help sponsors understand the new decision making process which utilizes the latest engineering studies on the causes of pavement deterioration. The AC details the benefits of having a (APMS) and describes each component.

This AC also references AC 150/5380-6B, "Guidelines and Procedures for Maintenance of Airport Pavements," which provides detailed guidelines for maintaining rigid and flexible airport pavements. Sponsors will be particularly interested in Chapter 4, Guidelines for Inspection of Pavements. It presents guidelines and procedures required for an effective pavement maintenance program including inspection schedules and record keeping. Appendix 1 of this AC provides the airport sponsor an excellent summary of what, as a minimum, a pavement maintenance management program should include.

7.0 Airport Capital Improvement Program (ACIP)



The Aeronautics Division has instituted a program to track airport development projects for short and long term planning purposes. The goal of the ACIP is to provide the Division and FAA with advanced information concerning potential project planning, engineering and funding assistance needs for both the upcoming year and several years into the future. The Division list of potential projects by airport and by year utilizes this information to understand funding needs.

The ACIP will assist the Division in programming for future needs and the community in planning for airport development. Each year the airport sponsor will be asked to update their airport's list of potential projects currently in the Division's CIP records. They will be asked to plan not less than three years in advance. Projects included should be realistic (local matching share funds have already been budgeted or approved) and reasonable (within the scope of the current) or soon-to-be-updated, ALP).

Any airport failing to provide an update to their existing CIP record by the requested deadline runs the risk of having their future, funding assistance projects request, (other than one that is emergency or security related), penalized by a reduction or elimination of their project ranking points at least until the next CIP update.

Airport sponsors of a GA airport should focus their attention on meeting the airport airside needs in the following areas:

Approach – clear approaches

Pavement Condition – fair or better rating

Runway Safety Area (RSA) - must meet to the extent practicable

Runway Protection Zone (RPZ) - adequate control

Obstacle Free Zone (OFZ) - no object in OFZ

Runway Edge Lighting – operating MIRLs if installed

Runway Markings – fair or better condition

Visual Navigational Aids - operational

Taxiway Requirements – turnarounds on taxiway

Airfield Geometric Standards - should be met, modified, or grandfathered

A general method of prioritizing needed airport improvements is by using a level of project priority process:

<u>Item</u>	<u>Example</u>
Safety	Improving the runway safety area, clearing obstructions in the runway protection zone

Security	Installing security fencing, new gates, security lighting
Preservation	Overlay airfield pavement, crack sealing, seal coating
Standards	Widening the runway, moving a taxiway
Capacity	Expand apron, extend runway
Other	Construct terminal building

Another way of determining what items need to be put on the ACIP list of projects is to consider asking questions such as:

- What about surrounding land acquisition needs?
- What projects are shown on the ALP, but are not in the ACIP?
- Are there any non-standard or violations to be addressed?
- Does the security fence need repair/replacement, or do you need to add any electric gates and cameras?
- Is there any pavement maintenance or rehabilitation work need?
- What about any facility maintenance or repairs?

B. AIRPORT ADMINISTRATION



Most general aviation public-use airports are owned and operated by city or county governments. This section contains suggestions that will have to be modified for those few airports with a different ownership situation. Owners of public-use airports are referred to as the "Sponsor" by FAA and TAD.

Neither federal regulations nor Tennessee statutes specify the organization required for the administration of these airports. Each city/county must decide the style of direction and the organization needed. Some organizations we have observed seem to offer advantages over others. But we would be very presumptuous to suggest that an operating system is wrong if the job of overseeing the airport is being

accomplished. Briefly, the various organizations with their advantages and disadvantages are:

Airport Authority (municipal or regional) has its authority to create funding, enter into legal contracts, is autonomous to acquire land and plan, develop and operate the airport. Such authority must be registered with the Secretary of the State of Tennessee.

Airport commission/board has to operate within the confines of the municipal/county charter. It is under greater political control, has to depend upon municipal/county elected officials for funding, is restricted in its flexibility in negotiating contracts, etc.

City council/county commission has to take time from operating other parts of government. Since they are elected officials, they can convince their fellow members instead of convincing the whole body as it would be with an appointed commission/board. Also, they are under the same restriction as other airport commission/boards.

Single management (executive) as the sponsor operates more efficiently since the executive is the one who makes the decisions and initiates the action. This normally works well if he/she is aviation-oriented. The deficiencies of this system are the failure of the executive to be re-elected or if he/she is deceased. Their expertise is lost to the community when this happens.

1.0 Organization

Currently, the most common airport governing body in Tennessee is split nearly



equally between committees and authorities. Committees are composed of interested and knowledgeable citizens appointed by the city or county mayor. On occasion, jointly appointed boards have been used.

In a few cases, board members are paid for their service, but in most cases, board/committee members donate their time and expertise as a public service.

In our experience, problems arise if the appointed board is too small, too large or fails to represent a cross section of public interest.

It is recommended that any airport board have at least three members and not more than seven members. The board should include at least two members who are highly competent pilots and can provide technical information for the other members.

The rest may be chosen from a group that has a strong interest in the community, understands the need and importance of the airport and are successful in their field of endeavor. It was found that the number of members on the board had no direct relationship to the success of the airport. The success of the board is dependent upon their economic concern for the airport and the community, and also the common goals that are created by a harmonious working relationship. Most of the boards meet on a monthly basis.

In a very few cases, airports have been successfully governed without an administrative board. In these cases, city and county mayors, city managers and the like have possessed a degree of personal expertise and time to govern the airport without a board's advice.

Another type of governing body is the airport authority (Tennessee Code 42-603 & 604), and as noted above, many communities have selected this approach. The airport authority is a quasi-legislative independent body that can govern the airport operation with a more limited degree of control and direction from local elected officials. It is chartered through the Secretary of State, and the members are appointed by the city/county mayor. Depending upon the wording of the charter, it can relieve the city/county mayor of much of the responsibility of directly supervising day-to-day airport business.

2.0 Responsibilities

All officials, whether they are elected or

appointed to serve as members of an airport board/committee of a public-owned airport, are trustees. As a trustee, they are responsible to the community for the effective operation and development of their airport. This is a responsibility that cannot be delegated to others.

It is the airport sponsor's responsibility to provide the required supervision of the airport activities and to see that it is operated efficiently and safely. Sponsors must develop and enforce policy, negotiate contracts and leases for airport facilities and property and plan for airport development. In addition, they ensure that capital funds are raised.

Operating revenues for airport improvement and operations are also the sponsor's responsibility. They are responsible for the safe operation of the airport. Therefore, statutes or ordinances that will provide operating rules are essential.

The selection of an airport manager is another important responsibility of the sponsor. The manager should provide input for the formulation of operating rules and regulations. In other matters, the sponsor must adopt minimum standards for commercial aeronautical service providers (CASP) to include fixed base operators (FBO) and other types. These minimum standards are designed to protect the sponsor, public and existing FBOs by listing the requirements for the privilege of conducting aviation activities on the airport. Communities will vary their approach to this problem, but a full service or special activity FBO must be defined.

Airport planning is important to provide the ideal growth and service to the community. It is vital that airports allocate funds, acquire land and push for zoning laws that protect the airport environment for the community. Local airport authorities must develop a land acquisition and zoning program to guide them in the acquisition of adjacent land.

The development and adoption of Rules and

Regulations, Minimum Standards, and Emergency/Security Plans are responsibilities that are essential for efficient and safe operation of the airport. These regulations and standards not only will greatly assist with controlling what goes on at the airport, but will also provide the guidelines to prevent misunderstanding between law enforcement officials and facility users. Persons who use or visit the airport should have readily available information to guide them in their activities, whether it is flying, watching airplanes or aircraft rental. Once these regulations and standards are approved, airport personnel and law enforcement officials need to be acquainted with them to ensure that they are enforced for the benefit of the community.

2.1 On-Site Management - Employment of a full or part-time manager is often considered an expense that the airport sponsor just can't afford; however, without one, the airport has little chance of being self-sufficient. We are starting to see a slight change from the earlier days of a FBO/airport manager arrangement to more sponsor-managed facilities. This may be the result of several factors; including a down turn in GA activity over the past few years which has slowed aircraft maintenance, flight instruction and fuel sales activities, not to mention, decreased the numbers of based aircraft.

In addition, it appears that the greater demand for maintenance professionals in the air carrier and cargo operations arena (along with their higher salaries and benefits) has resulted in more young maintenance professionals relocating to larger cities with air carrier based maintenance operations.

Also, the loss of many local manufacturing businesses has resulted in decreased utilization of the local GA airport by company and supplier aircraft and just-in-time or customer flights. Other factors have attributed to the change in airport management: increased aircraft and business insurance, liability costs, less recreational and

training flights due to higher aircraft rental and ownership costs and retirement of many maintenance professionals.

There are numerous examples of FBO/airport management across the state and in most instances; those operators are engaged in very active operations. What each sponsor needs to consider, however, is the quality of services being offered, the appearance and maintenance of airport facilities, the workload imposed by the management function, the availability of governing body members to oversee management aspects and the effort to promote the community and airport by this type of arrangement.



In an FBO/airport manager arrangement, the airport sponsor needs to be concerned about the airport facility being maintained regularly (grass cut, buildings maintained, facilities neat/clean, etc.). He/she needs to ensure that airport administration activities (facility leases, service proposals, land uses, regulations, security issues, etc.) are still handled properly and promptly forwarded to the governing body.

Reports on activities (aircraft operations, based aircraft, etc.) and services (fuel flowage, hangar rentals, leases, etc.) should be provided regularly by the FBO/manager. All airport planning and policy considerations need to be routed and approved by the airport sponsor. This level of responsibilities would warrant a full-time airport manager.

2.2 Sponsors/Airport Manager Selection Considerations - Members of the administrative body have a most important duty in the selection of an

airport manager. In some cases, it may be preferable to make the airport manager someone other than the fixed base operator.



The manager must be someone who can accomplish all of the requirements of that office; carry out the leadership role and meet the objectives of economic betterment of the community. Among other things, the manager should have a keen desire to serve the public and be willing to further his/her knowledge of the aviation business.

He/she should have aviation experience and/or a college degree with emphasis in aviation or aviation management experience. Familiarity with bookkeeping and accounting procedures would be beneficial.

The airport manager needs to have vision and motivation and be a good communicator. In the selection process, the administrative body should interview each applicant and be in agreement on the candidate. Once the selection has been made, every action possible should be taken to support the new manager in running the airport.

Gaining public support for the airport is one of the key roles of the administrative body. The manager should provide periodic news releases about the operations of the airport and its economic benefits. The aid of business and industry in promoting the airport can also be enlisted in this effort. It is beneficial to speak to civic groups and partner with local, regional and state planning organizations.

The airport manager should promote the airport through open houses for the public and airport days for the schools in order that children can visit airport facilities. Leadership and support of the local operator increases the public

awareness of the advantages offered by their airport. This will increase their awareness of how their tax dollars are being made to work for them.

Specific duties and responsibilities of airport managers, to include airport promotion, are discussed in more detail in Section 5A of Volume I & Section 4A of Volume II.

3.0 Disadvantaged Business Enterprises

The Tennessee Department of Transportation supports efforts to utilize DBE participation in transportation projects. In many airport improvement projects, DBE goal participation is defined at the development stage of the project. Airport sponsors are reminded that local adoption of a DBE Program is a requirement associated with most grants and that the airport sponsor should place stand alone DBE advertisements in local/regional newspapers early in the calendar year for any upcoming airport improvement projects.

TDOT Aeronautics Division has developed a standardized DBE Program which may be adopted by the local community to meet the requirements of the DBE obligation. When an airport has a larger, full-time staff, the DBE Program may be developed in-house. In either instance, the Aeronautics Division should be notified of the format and adoption dates for the local DBE plan. Contact the Division for addition information on DBE procedures.

4.0 Title VI

TDOT's policy on Title VI states, "No person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under a program or activity receiving federal financial assistance from the Department of Transportation."



- Airport sponsors should ensure that Title VI requirements are being met by reviewing current procedures. Some questions to consider:
- Are Title VI posters properly displayed at the airport?
- Is there a Title VI complaint log and hearing process available?
- Is there a method of monitoring Title VI contractor compliance activities?
- Are new and current employees being informed of Title VI provisions?
- How do we monitor ethnicity and gender of contractors?
- How do we solicit minority owned and DBE firms?
- Have we an approved Title VI Assurance / Coordination Plan or statements indicating that sub-recipient will adopt TDOT's procedures?
- How do we encourage diversity on transportation decision making bodies (e.g. – airport boards/committees/authorities)?
- Do we have limited English proficiency (LEP) procedures in place?
- Do our local contracts contain nondiscrimination assurance language?

In most communities, a Title VI coordinator may already be in place at the local level. An airport sponsor should coordinate with this person to ensure that process, procedures and posters are in place. Furthermore, the airport sponsor may want to have this person explain these procedures to airport management.

C. AIRPORT DEVELOPMENT

The steps required for actual airport development follows the most important managerial task of planning. In most cities/counties, this step is very often tied to raising the money needed for the development job.

In 1970 the U.S. Congress came to the realization that airports were as necessary to the National Transportation System as were interstate highways and canals and provided a mechanism for assisting states

and local governments with the funding for airport development and improvement.

The Airport Development Aid Program (ADAP), now known as the Airport Improvement Program (AIP), has undergone a number of modifications since 1970, but its provisions are very important to all airport sponsors.



Unfortunately, the availability of federal and state monetary assistance does not completely eliminate local funding problems. The city/county airport sponsor still has to come up with a matching share of some of the money to fund airport development projects.

At this point, we often run into a stumbling block based on community beliefs. Many laymen feel that an airport only serves the fortunate few who own aircraft. They feel that flying is an unnecessary luxury. A few well informed citizens fully realize that an airport is a community asset in much the same category as the water system, fire protection and police. A well run, busy airport should contribute toward the repayment to the community for development capital. But even if the daily revenues do not, the overall economic influence of the airport (over a period of time) will more than pay its way. Airports must maintain an up-to-date Airport Layout Plan showing proposed development.

The key word in all of this process is management. An airport may have a beautiful physical layout but little or no business, possibly because of indifferent operators. In the next county, an airport with less than adequate space, few hangars and a short runway has to turn away the business it cannot handle. The difference is

quality of management and providing customer service.

1.0 Funding Programs

Airports, like other utilities, must grow if a demand exists and must be maintained even in the absence of growth. Though state and federal assistance is available, some local money must be spent for airport development and upkeep. In a well regulated, well-managed airport, current revenue, including fees for hangar rental, non-aeronautical buildings, fuel flowage fees, FBO facility leases and the like, should help cover the airport manager's salary and fund development projects. For larger, immediate projects, capital bonds and/or revenue bonds can be issued without serious effect on the local tax base. Direct revenue-producing activities that are turned over to an FBO may be lost for local airport developmental purposes, and this factor should be considered when deciding to hire or not hire a resident manager.

Capital funding situations are different from routine operating income funding. It is important to lay out a budget for the true or actual cost of keeping the airport open for business. Such things that require funding will be utilities (electricity, gas, water, sewage and telephone), mowing, supplies, painting, renovation of buildings, procurement of equipment, salaries and travel expenses.

1.1 *Federal Funding* - There are currently two programs for matching local funding for airport capital improvements, federal and state. The federal government, through the Federal Aviation Administration's (FAA) Airport Improvement Program (AIP), provides funding for a variety of airport construction projects. It is important to understand that the AIP program does not fund every type of airport improvement, and that funding is limited to airports included in the FAA's National Plan of Integrated Airports (NPIAS). Furthermore, the AIP funding program is authorized by

the United States Congress for a certain amount of time, three to four years typically. Each time the AIP is re-authorized, you may hear it referred to by a shorten version of the full title of the congressional bill that introduced it, for example, in the past, we had Air 21 (Fiscal years 2001 – 2003), followed by Vision 100 (Fiscal years 2004 – 2007).

The FAA has established and published guidelines regarding AIP project funding eligibility. In general, most projects that involve runway and taxiway pavements or markings are covered, as are air field lighting (runway and taxiway lights, rotating beacons, lighted wind cones and visual glide slope indicators). In some instances, additional justification and/or an environmental study may be required prior to the consideration of an airport construction project request. Sponsors should contact the TDOT Aeronautics Division for more information on project eligibility and formulation.

The federal Airport Improvement Program (AIP) is further divided into several funding categories, some of which are directed specifically for air carrier airports and others for improvements at general aviation airports. In Tennessee, AIP airport improvement project funding falls under one of five categories. Those AIP funding categories include: Air Carrier Airports, State Apportionment, Non-Primary Entitlement and the Discretionary and Military Airport Program (MAP).

Air Carrier – The Air Carrier category of funds are directed to FAA Part 139 certified airports, emplaning over



10,000 passengers annually. In Tennessee, this includes Memphis International, Nashville International, Lovell Field – Chattanooga, McGhee-Tyson – Knoxville and Tri-Cities Regional – Bristol-Kingsport- Johnson City.

State Apportionment – This is a category of funds appropriated based upon the state's population and geographical size. These funds are channeled through TDOT Aeronautics Division for use at GA airports across the state.

Non-Primary Entitlement - The Non-Primary Entitlement Program was authorized by U.S. Congress starting in Fiscal Year 2001. The program targeted AIP funds to general aviation airports with a threshold level of projects contained in the NPIAS.

Discretionary – Funds that are administered at the discretion of FAA.

Military Airport Program (MAP) – The Military Airport Program was started to assist with the conversion of military airports to civilian or joint use.

1.2 State Funding - The other funding source for airport capital improvements is the Tennessee Equity Fund (TEF). Established by the state legislature in 1986, the TEF provides a somewhat more flexible source for airport improvements. Funding eligibility is established through departmental policies initiated in many cases by the five-member Tennessee Aeronautics Commission. Current TEF funding policies can be found on the Aeronautics Division's website.

It should be noted that both funding sources (federal and state) are user fee generated funds. This means that funding comes from airport system users not the state's general fund.

1.3 Channeling, Block Grant and Project Funding Percentages - Sponsors should understand that the State of Tennessee is a "channeling" state.

This means that all federal AIP funding is routed through the Tennessee Department of Transportation for disbursement.

Tennessee is one of ten states currently designated as a "Block Grant" state by the FAA. As a "Block Grant" state, TDOT Aeronautics Division handles certain FAA duties in-house and is afforded more flexibility in administering AIP funds. This flexibility has allowed the state to establish several airport project share funding percentages levels (50/50, 75/25, 90/10) in order to maximize the impact of limited AIP and state funds.

1.4 Local Funding - As mentioned previously, capital improvement funding is provided on a federal/state and local matching share percentage. Therefore, the sponsor must plan and budget for local funds to be available to match any federal and/or state grant.

The local airport can raise part of these operating funds by collecting flowage fees on fuel and oil, rental fees from the local FBO's or other aviation related operators, agricultural rent, industrial parks, hangar rental etc. In some cases, these revenue producing programs will pay for airport operating funds and major capital improvements. Generally though, most airports will require some funding assistance from the general operating revenues of the city or county.

Regardless of the situation, the airport should produce, as planning dictates, as much revenues as it possibly can. The aviation public will always pay their fair share for services rendered. Again, we come to the basic problem: some airports simply do not offer adequate service and therefore cannot begin to generate more income. It is vital that the committee/commission and the airport manager create an

atmosphere in which the airport can grow and provide the services which in turn will provide greater revenue producing opportunities and decrease the need for local tax money.

It is not possible in this handbook to specify all the ways that operating expenses and capital funds can be realized for airport operation.

In some situations, we recommend that airport sponsors whose airports are having financial problems consider consulting experts in this field. Money spent for consultant services may be money well spent.

2.0 Controlling Development Projects

Most community airports cannot be completely developed using local funds. However, acceptance of federal funds imposes some conditions on the sponsor. These conditions are described in the Assurances—Airport Sponsors' attachment that is either part of or referenced to in a Federal Airport Improvement (AIP) Grant agreement. In the absence of local expertise or experience, the sponsors should engage professional planners and engineers to advise, assist and oversee projects. Aeronautics will assist sponsors with questions and expenditure processing matters.

Refer to the www.faa.gov website for advisory circulars pertaining to airport development and operations.

D. CONTROLLING THE AIRPORT

It is highly unlikely that the sponsor or its governing board would ever be expected to personally direct the day-by-day activities of the community airport. Those functions would normally be delegated to an airport manager and sufficient authority given to him/her to carry out responsibilities.

However, in accordance with the Airport Improvement Program (AIP) Sponsor Assurances and AC150/5190-6, "Exclusive Rights at Federally-Obligated Airports," "the owner or operator of any airport that has

been developed or improved with federal grant assistance is required to operate the airport for the use and benefit of the public and to make it available for all types, kinds and classes of aeronautical activity."

Thus, we consider it vital that both the airport governing board and the appropriate city/county official ensure that federal, state and local policies are being enforced. This is a particularly heavy responsibility in those situations where a fixed base operator is functioning as the airport manager. Although this arrangement is not improper, the sponsor must continually be aware that ensuring the full benefit of the airport to all residents might not always be in the best business interest of a profit-oriented FBO.

1.0 Policy Making

Policy making in a governmental operation is normally considered to be a function of elected officials. In most city or county governments, the process is carried out by the legislative organization. It is our belief that broad policy decisions concerning the community airport be handled in the same manner as decision making for any other public utility. In the same way that electric company boards and managers provide expert advice and input to the legislative body, so should the airport committee/commission and manager.

In some communities, the airport committee has little expertise in the complex field of airport management; input to decision making comes from the airport manager/operator only.

We believe that this could represent a potentially harmful arrangement with the manager/operator becoming virtually accountable to no one, making policy that may or may not be in the public interest. In those communities where the board lacks aeronautical experience, we strongly recommend open meetings on a regularly scheduled basis with aircraft owners/pilots, aviation organizations and supporters to garner input to the decision making process.

2.0 Operational Rules & Regulations

We strongly recommend that the operating rules for each public airport be published in the form of an Airport Rules and Regulations document. It would preferably be separate from the Minimum Standards document for ease of making and distributing changes to the rules and regulations without affecting the whole document. The rules and regulations document should be widely distributed to airport users and law enforcement agencies. Aircraft owners and pilots are usually cooperative and should not object to reasonable restrictions in the name of safety. It might be best to keep in mind that a few rules rigidly enforced serve a more useful purpose than having a number of minor regulations which cannot be enforced.

The development and promulgation of the airport Rules and Regulations for the airport is a very important responsibility of the airport board/committee and manager. However, since every airport in Tennessee is different in design, size and usage, it is virtually impossible for any outside agency to do much more than suggest broad general guidelines in this section of the airport manual.

Even though it is not possible to specify the exact nature and wording of each airport's needed regulations, some common points do exist. In general, all airport regulations should be:

- Brief and to the point
- Exclusive, that is each regulation should cover only one item
- In plain English
- Concrete enough to regulate the action desired without exception
- Enforceable and enforced
- Needed

The best rule to follow is write only those rules that are absolutely necessary and enforce them with impartiality. Section 5A6.1 offers more guidance which may be useful when writing aircraft operating rules.

One set of rules that is often neglected, but should probably be written, covers the

duties and responsibilities of airport management employees. Again, it is very difficult to suggest detailed items, but the type of things that might need covering would include:

- Work hours
- Dress and appearance
- Courtesy
- Fire, rescue responsibility
- Safety regulations
- Contact with media
- Rule enforcement responsibility
- Grievance and appeal procedures
- Workman's compensation rules

Keep the rules simple, to the point and enforceable.

3.0 Minimum Standards

After the broad policy decisions have been made by the city/county government, the airport committee/commission is usually charged with establishing rules, directives and guidelines for airport operation. One very important function demanded of the committee/commission is the establishment of standards for commercial aeronautical activities. Often commercial operators are allowed to operate businesses on public airports that proved to be unsafe, unethical, and in a few cases, illegal. In every case airport sponsors were without guidance in evaluating the business in a technical sense before trouble occurs.

As stated in subsection 2.0 above, we also strongly recommend that the minimum standards be established in a document separate from the rules and regulations. This would make it easier to distribute changes. The document would be made readily available and/or distributed to any airport users expected to abide by them.

FAA Advisory Circular AC 150/5190-7, or most current revision, "Minimum Standards for Commercial Aeronautical Activities," gives minimum standards that can be applied to commercial activities. The stated purpose of this AC is to "provide basic information pertaining to the Federal Aviation Administration's (FAA)

recommendations on commercial minimum standards and related policies.” In some cases, it might even be appropriate to hire a consultant to help develop a set of minimum standards.

A “fill-in-the-blank” document should not be used because there is no “one-size-fits-all” document existing at the moment. You must plan on tailoring the minimum standards to fit the specific circumstances occurring at your airport at the time and in the foreseeable future. It is; however, a living document which would need updating as things change. Several airports have recently developed minimum standards which you may find to have similar circumstances to your own airport and thus might be useful as startup examples.

4.0 Exclusive Rights

It is very important that airport committees/commissions and managers fully understand the federal laws and regulations which prohibit the granting of exclusive rights at airports receiving federal assistance. Before beginning the process of developing a set of minimum standards, it is best to become familiar with FAA Advisory Circular (AC)150/5190-6, “Exclusive Rights at Federally-Obligated Airports.” The AC begins by stating “The prohibition on the granting of exclusive rights is one of the obligations assumed by the airport sponsors of public airports that have accepted federal assistance, either in the form of grants or property conveyances.” Furthermore, it states that “the owner or operator of any airport that has been developed or improved with federal grant assistance is required to operate the airport for the use and benefit of the public and to make it available to all types, kinds, and classes of aeronautical activity and without granting an exclusive right.” The AC also explains the statutory basis of and exceptions to the policy.

5.0 Leases

Leases of airport property protect both the public’s interest and that of the aeronautical operator. Remember, no activity can be

granted exclusive rights if the airport has received federal funds in the past. All leases should cover a period of three to five years with options to renew up to a maximum period of 20 years. Lease rates must be renegotiated every three to five years to ensure that airport revenues do not diminish. All revenues generated on the airport must be used for the airport operation, maintenance and development. An airport is like any other business, capital expenditures are necessary for it to remain a revenue producing facility.

6.0 Licenses

All public-use, general aviation airports must obtain and annually renew their Public Airport License in order to operate in



Tennessee. The Tennessee Department of Transportation’s document, “Licensing of Airports,” outlines the necessary requirements needed to obtain this license. Airports holding an FAA air carrier airport certificate are exempt from the state airport licensing requirement.

One of the licenses that airports must renew is the frequency administered by the Federal Communication Commission. Some examples are Unicom, Non Directional Beacon (NDB), Ground Communications Outlet (GCO), Automated Weather Observation System (AWOS), Localizer, Glide Slope, and Distance Measuring Equipment (DME).

The runoff from the airport property is subject to licensing/permitting by the Tennessee Department of Environment and Conservation, Division of Water Pollution Control. A state and local business license is necessary for private enterprises to conduct business on airport property. The airport fuel system is subject to licensing/ certifying by the Tennessee Department of Agriculture, Division of Weight and

Measures. All licenses provided by the state, local and federal governments must be displayed in a prominent place at the airport.



7.0 NOTAMS

Notices to Airmen (NOTAMS) are notifications generated by airports managers and issued by Flight Service Station (FSS) personnel to enhance the safety of flight. Airport managers should contact the controlling FSS anytime a situation arises that may affect flight of aircraft and request a NOTAM be issued. NOTAMS are issued by FSS personnel involving information of a temporary nature or before the associated aeronautical publication has been amended. Pilots, in completing their pre-flight planning will check with FSS personnel for any NOTAMS that may affect their route of flight or airports at which they may be landing.

NOTAMS are issued for a variety of reasons: safety of flight during construction on the airport, modification of runways or taxiways, when part or the entire airfield lighting system is out of service, emergency situations such as sinkholes or pavement problems, prior to closing a runway and so forth. Other times, NOTAMS are issued to alert the pilot to possible route of flight hazards (e.g. – an un-marked/lighted tower), when NAVAID outages occur or when other changes in services affect the safety and efficiency of flight.

Airport management is expected to alert the public about any condition on or near the airport that would present a hazard to arriving or departing aircraft. A similar notification should be made when the condition has been corrected. Any person who commences construction is required to submit a notice if the construction falls into

certain parameters. FAA Advisory Circular 150/5370-2, "Operational Safety on Airports During Construction," should be consulted prior to the start of any on-airport construction.

In addition to requesting that a NOTAM be properly issued, airport managers should ensure that an FAA form 7460-1, "Notice of Proposed Construction or Alteration," is executed 60 – 90 days prior to construction. This form notifies the FAA branches that a change in airport configuration is about to take place. For further details concerning NOTAMS, see FAA AC 150/5200-28, "Notices to Airmen (NOTAMS) for Airport Operators."

8.0 Landing Area Inspections

Background – The Tennessee Code Annotated I §42-233 decrees that landing areas for airports, heliports, seaplanes, etc., are inspected or evaluated annually to determine if the facility meets current licensing requirements. The result of the safety inspection/evaluation is an inspection report describing problems that were identified during the inspection. A copy of the inspection report is forwarded to the landing area sponsor, board or authority chairman and the airport manager/operator.

Landing area inspection reports are divided into two sections, I and II. Section I describes items that must be corrected to meet current licensing standards. Section II describes other safety or maintenance items that the inspector noted during the inspection and that the Division staff feel require attention. Section II may include additional items that relate to FAA operation recommendations or requirements.

Report Follow-up - Landing area owners are responsible for ensuring the items noted in the report are corrected as promptly as possible. Since issuance of the license depends on the correction of the item(s) identified in Section I of the report, the owner is required to forward a response within 30 days of the date of the report outlining the plan-of-action to correct the safety problems. In some instances, a re-inspection may be necessary.

E. REVENUES

The need to generate revenues from the airport operations is great because of the necessity for providing safe aviation activities, improving existing facilities and building new ones. The airport must grow; it cannot remain stagnant and continue to be a viable entity. There are many ways revenue can be increased, e.g., aeronautical service provider leases (rents), ground leases, fuel flowage fees, industrial park and agriculture operation leases on land not used for aviation activities.

Throughout the southeastern part of the United States, most FBO leases provide for reasonable facility (hangar, fuel farm, terminal space) rental fees which are paid into the airport fund. These fees range from a monthly lease rate to a percent of the gross revenues plus a fuel flowage fee. Other sources of income can come from airport "T" hangars that have been constructed by local financing and other funds.

These facilities will provide additional airport revenue at no cost to the taxpayer. Providing proper facilities on the airport increases the potential for based aircraft on the airport. It also increases the tax base and provides a greater income for the FBO. Increased community employment is the end result of greater airport and aircraft utilization.

It is the airport sponsor's responsibility to establish rates and charges, prepare standard lease agreements and create financial procedures which are all vitally important to producing the airport revenues. Some of the items involved in the process:

- Market Assessment
- Market Analysis
- Establishing Rates and Charges Policy
- Setting Rents and Fees Structure
- Lease Agreements
- Annual/Quarterly Reports
- Cash Report
- Audit Reports

A. THE AIRPORT MANAGER*1.0 Qualifications*

There are many textbooks that attempt to define the traits of a successful manager. Many of the traits are admirable

qualities that would also apply to your best friend or family member. Although honesty, helpfulness, friendliness and integrity are irreplaceable characteristics, they are best when complimented with an enthusiastic spirit.

Enthusiasm is one element that draws the users back to the airport. It takes a special talent to incorporate these skills while striving to maintain the best service for the airport users. Users are attracted to an airport with a manager who keeps their best interest at heart. Airport managers must possess a pallet of skills in order to complete day-to-day functions at their airport. Increasing complexity and volume of the airport may require the manager to understand the skills of an engineer, planner, electrician, or plumber. Managers are also expected to have a working knowledge of proper accounting and bookkeeping practices.

The manager is exposed to many contracts and leases where legal expertise is necessary and serves as a public relations specialist for the promotion of aviation and the airport. An airport manager must serve as a liaison proficient in communications with customers, employees, peers, media and local and state government.

Knowledge is the key to understanding. Managers should constantly challenge themselves and their staff to learn more about aviation and airport management. We suggest that one major area for improvement is the acquisition of new knowledge. Universities and colleges throughout Tennessee continuously offer

individual courses in management theory, accounting, computer usage, taxes, collective bargaining and the like, often in the evening. Any manager could benefit from these type courses.

Effectively pooling your resources is an excellent way to keep abreast of current events. A manager who reads aviation trade magazines, communicates with other airport managers or participates in professional associations is likely to be more successful than one who does not. Professional associations are good sources for current problem solving information. Airport managers may want to consider becoming members of either the American Association of Airport Executives (AAAE) and/or the Southeastern Airport Managers Association (SAMA). These organizations provide a forum for discussion of common airport problems and are a means of information interchange which has proven very valuable. An airport manager should be or should consider becoming a licensed pilot.

Even though it is possible to manage an enterprise without technical qualification,



most experts believe that the real ability to speak the clients' language is invaluable.

2.0 Relationships

The organizational structure adopted by airport sponsors or operators may legitimately vary in every community/county that operates an airport. It is not our intent to show that any one organization is necessarily best; in fact, research has shown a variety of very successful operations.

In an "ideal" setup (for illustration purposes only), the airport manager is the key executive, directly responsible to the community/county official for the day-to-day operation of the airport.

In most cases, policy making in such an organization should be shared by the governmental unit executive with an airport commission/board made up of concerned and qualified citizen appointees.

The most important aspect is that lines of authority and responsibility be clearly defined. Even though it may be legally the responsibility of some governmental agency to define roles, responsibilities and authority of the airport manager, it is in the best interest of each manager that such relationships be in writing and made a part of his employment contract. This may seem a small item, but in our experience, severe problems have resulted when the roles of elected officials, appointed board members, airport users and the manager were not clearly stated.

In some communities, the authority-responsibility position of the airport manager has become blurred, usually as a result of a weak or nonexistent airport policy board and/or an indifferent local government, indifferent that is to airport operation. In a few of these cases, the manager has assumed more and more authority, has taken on more responsibility so that the airport is ultimately thought of as the manager's private domain rather than a public utility. In some cases, the airport has folded in a business sense, even though sufficient traffic was available for a profit-making operation.

We believe that most airport management problems could be minimized if the appointed manager keeps firmly in mind that he/she is, after all, a public servant, hired for the sole purpose of running a safe, clean, well maintained airport for the good of the entire community. We have found repeatedly that such managers have few run-ins with the press, are favorably received at budget time, attract business (both local and transient) and if the truth were known, had fewer ulcers than some contemporaries.

The problem of dual loyalties of managers must be mentioned. There are a number of

airports where a profit-oriented FBO also acts as airport manager and does so with absolutely no conflict of interest and with great effectiveness. However, studies have shown that such situations are fraught with problems and should be avoided whenever possible. Even though federal law prohibits an airport receiving federal funds to grant exclusive rights on that airport, it would seem very difficult for a FBO/airport manager, for example, to approve a potential competitor. Similar examples of potential conflict are easily imagined.

3.0 Duties and Responsibilities

It seems safe to say that no two airports anywhere have the same problems, the same needs or the same resources. It is virtually impossible for anyone to prepare a list of managerial duties and responsibilities that would be universally applicable.

All we can do is offer some generalities that are known to be rather common management functions.

No attempt has been made to rank the items on this list in any degree of importance except the first item. Duties of general aviation airport managers generally include:

- Safety - One of the most important responsibilities of an airport manager is providing safety for users, visitors and employees. Regardless of legal or contractual requirements, it is the absolute responsibility of everyone even remotely connected with aviation to promote safety in every possible way. Violations of good practices, as well as violations of state or federal aviation regulations, must be corrected by the airport manager, even at the cost of losing a friend or customer. Any less emphasis would represent moral, if not criminal negligence.
- As previously mentioned, it is the airport manager's responsibility to generate Notices to Airman (NOTAMS) which are then issued by Flight Service Station (FSS) personnel to enhance the safety of

flight. Airport managers should contact the controlling FSS anytime a situation arises that may affect flight of aircraft and request a NOTAM be issued. In particular, a NOTAM should also be issued, as soon as practical, when any condition, on or near the airport, would present a hazard to arriving or departing aircraft. A similar notification should be made when the condition has been corrected.



- Promotion of aviation - It is a responsibility of an airport manager to promote aviation by example, by word of mouth, by promoting media relations and other means.
- Promotion of the airport - The airport is a public utility owned and operated for the good of all citizens, not just airplane owners. Public displays, open houses and the like should be planned and conducted. More importantly, every visitor should be made welcome and should be allowed access to the airport, consistent with safety and security consideration.
- Political relations - One of the most difficult feats to accomplish is maintaining good relations with municipalities, authorities and other governing bodies. The job requirements of the governing body and the manager should be clearly defined in writing in order to prevent any miscommunication between the two. A manager is an effective communicator who has the ability to understand the legal jargon of political meetings and documents.
- Maintenance of the airport - It is a major concern of the owners that their investment be protected. Upkeep of buildings, repair of surfaces and the like are obvious duties. Maintaining the

appearance of the airport to attract visitors and users is also important but more frequently neglected. An important tool in airport safety is implementing an "Airport Self Inspection Program." This allows the manager to keep up with items such as pavement condition, airfield safety areas, ground vehicles, lighting operation and ongoing development to name a few. This program is described in detail in Section 5C below.

- Preventive maintenance - One of the best ways to avoid accidents is by implementing a preventive maintenance program. Maintaining the appearance of the airport will not only attract visitors, but will also assure the owners their investment is protected. The upkeep of buildings, repair of runway, apron, and parking surfaces, manicuring the grass and other preventive techniques should be accomplished.
- Supervising the airport - The airport manager usually has the responsibility of making and posting airport rules necessary for safety and security. (Depending on the governance of the airport, such rules may require board and/or executive approval).
- In this regard, we strongly believe that the fewest necessary rules represent best management.
- Develop policies - The airport manager must develop basic policies in every area of airport management. The policies present guidelines for the airport staff, maintenance programs, record keeping, potential tenants, business contracts, environmental issues and the annual budget. The enforcement of these policies also falls at the feet of the manager. Having these policies in writing can decrease the chance of misunderstanding requirements.
- Enforcement of regulations - It is the duty of the airport manager to ensure



enforcement of laws, ordinances and regulations pertaining to safety and security of the airport. Included in this responsibility is liaison with law enforcement agencies.

- Business management - The airport manager has budget making and accounting responsibilities regardless of the size of the airport. Effective and efficient use of funds, avoidance of waste and proper reporting are among the manager's direct responsibilities.
- Public service - The airport manager plays the role of a public servant who focuses on the goals of the community, not the airport's profitability. It is the airport manager's duty to remain informed on aviation matters and be prepared to offer assistance and advice on aviation when required. The manager is available at all times to cope with any airport emergency. A manager who also serves as the fixed based operator is cautious of decisions that may create a conflict of interest for the airport and keeps the well being of the airport in mind.

4.0 Manager Training, Techniques and Tools

If a community airport is to take advantage of the growing use of aircraft and claim its share of the market, its manager must be on top of current, proven managerial tactics. It is probably not necessary that the manager knows or recognizes all of the "jargon" in use, but he/she should have some idea of the management concepts which have been proven in actual use. We recognize that not all airport managers have had formal training in management processes. Some managers instinctively do the right thing more often than not. Some highly trained managers fall on their faces. We believe that "common sense" adaptation of research-proven techniques will improve existing management in nearly every case. One of the exhibits included in this manual is a checklist which can be used by airport sponsors and managers to possibly enhance

overall management techniques. The checklist certainly is not intended as a replacement for formal managerial training, but it should prove to be a useful management tool. (See the Airport Checklist in the appendices.)

5.0 Airport Safety

Safety is the paramount concern at any airport. Large airports have highly skilled, efficient emergency services; fire/rescue, police and medical services.



Small and general aviation airports do not have access to an abundance of crash, fire and rescue equipment (CFR) and personnel due to the high capital costs for equipment, training and the high operating and maintenance costs.

A major source of assistance to small airport managers and FBO's is the local fire chief. He can provide a wealth of information on CFR techniques and training programs. He also can provide information about when training sessions will be held so that managers and members of the staff can periodically attend. If an airport is close to a full-time city fire department or a volunteer fire department, their assistance in fire fighting and training can be requested. Joint crash rescue procedures can be negotiated so that everyone is aware of their responsibility. These procedures must be reviewed periodically and updated as necessary.

It is the responsibility of the airport sponsors, airport manager and/or the FBO to ensure that all local codes are being followed. Also, they should be certain that the airport operation has proper insurance coverage for any volunteer groups participating in the CFR.

5.1 General Aviation Safety - Efforts to improve general aviation safety have been too broad in some respects—approaching the problem as a whole while the various types of flying are dissimilar, and each needs its own special treatment. They have been too narrow in other respects—dealing with bits and pieces of accident causes. For a systematic approach, the obvious way is to identify the types of flying where most accidents occur and the most frequent causes, then concentrate on these key points.

5.2 Safety Overview - The “key” to a good safety management program is attitude, whether that of employees in general or management in particular. The personnel under one’s direction or supervision are greatly influenced by the manager’s attitude toward many things. A conscientious manager must firmly support and publicize the safety program. The manager, in order to ensure interest and enthusiasm on the part of others, must be interested and enthusiastic about safety. This attitude must be communicated by the manager to all areas under his responsibility.

All new employees must be indoctrinated in the safety program. Most people are very susceptible to making first impressions lasting ones. Safety is the “life blood” of any organization, and this must be transmitted to all new employees regardless of their positions. Once the employee learns the job and begins to feel comfortable in his/her new surroundings, he/she will become lax in practicing safety. The problem for the manager then is to make certain that the ongoing safety program meets the need for reminding everyone that safety practices are not a waste of time, nor is it someone else’s job. It is everyone’s job, and they must work at it constantly.

5.3 Symptoms and Causes - Managers should be on the lookout for the following symptoms and causes which are responsible for most accidents.

Symptoms:

- Absentmindedness
- Laziness
- Ignorance
- Indifference
- Hostility
- Weariness
- Overconfidence

Causes:

- Personnel do not realize that what they are doing is wrong.
- They misunderstand instructions.
- They don’t consider the instructions important.
- They are not given specific instructions.
- They deliberately disregard instructions.
- They have not been properly trained.

5.4 Airport Emergency and Security Plan Development Guide - In May of 2002, the Tennessee Aeronautics Committee made it a requirement that each airport work immediately toward the adoption of an Airport Security and Emergency Plan with local emergency officials. A copy of the plan was required before an airport received any future grant approvals. Sponsors should periodically update and review the plan.

Also available is a security project guide, titled “Airport Security Improvements,” which explains the funding procedure and gives general information about various types of security projects.

6.0 Airside Operating Procedures

The development of the airside operating procedures for the airport is



another very important responsibility of the airport board/committee and manager. The procedures may need to cover a variety of aeronautical operations.

Aeronautical operations include any activity that involves, makes possible, or is required for the operation of aircraft or that contributes to or is required for the safety of such operations.

This includes, but is not limited to parachuting and drop zones, gliders, Ag operations, banner towing, and aircraft maintenance.

The owner of a public-use airport (public or private owner) may elect to provide any or all of the aeronautical activities needed by the public at the airport. As a practical matter, most public agencies recognize that these activities are best provided by profit-motivated private enterprise. One of the more essential related Advisory Circulars pertaining to aeronautical operations is FAA AC 90-66, "Recommended Standards Traffic Patterns for Aeronautical Operations at Airports without Operating Control Towers."

A few of the most important airside operating types of rules are discussed below in broad and general terms.

6.1 Aircraft Operations - Airport management is required by federal regulations to establish aircraft operating rules for aircraft operating on or in the vicinity of the airport. In this regard, the airport manager has fairly broad but limited powers. It is very important that a new manager fully understands the applicable federal, state and local regulations and refresh his knowledge as time goes by. Many airports have old rules in direct conflict with new FAA standards, a very confusing and possibly hazardous situation. It is vital that aircraft operating rules be:

- Clear. Every pilot, including the most junior student, must be able to completely understand all procedures.
- Transient oriented. Local nicknames, obscure geographical references and the like must be eliminated. The visiting pilot must conform to airport rules and cannot if he doesn't understand them.
- Possible. Every rule must be carefully drawn up so that both the highest and the lowest performance aircraft can perform. Procedures requiring short landings, high rates of climb and

descent or sharp turns are unsafe.

- Authoritative. Rules for aircraft must be handled in the same manner as any ordinance or law and should be voted on by appropriate legislative bodies after public hearings.
- Available. As a matter of routine, a copy of each airport's regulations should be sent by certified mail to all aircraft owners on the airport. New owners should be given a complete copy of the rules when they arrange for tie-down or hangar space. All regular flight instructors should be furnished a personal copy of the regulations, and a complete copy must be prominently posted at all FBO pilot lounges.
- Enforced. Operating rules should be based on safety. Frivolous rules should not be a part of the code of regulations. If safety is a real concern, then such rules should be vigorously and impartially enforced with violators warned first and then reported, if required.

6.2 Refueling Safety Rules - One of the most potentially hazardous operations on the entire airport involves the fueling of aircraft. For this reason, separate directives covering this operation should be developed and strictly enforced. This very frequently neglected area must receive the attention of airport managers if serious problems are to be avoided. Refueling regulations should ensure:

- Selectivity of fuel. Introduction of gasoline into jet engines can cause engine damage. Introduction of jet fuel into reciprocating engines could prove fatal. Foolproof systems must be developed to eliminate the possibility of mixing fuels.
- Cleanliness. Fuel delivered to aircraft must be free of water and other debris. Regulations must provide for proper operation and inspection of fuel equipment.
- Weather restrictions. Refueling of

aircraft must cease during electrical storms. Airport refueling rules must assign responsibility for determining when refueling must cease and when it may resume.

- Grounding. Many FBO routinely refuel aircraft without ensuring proper grounding of the aircraft and fueling equipment. This dangerous practice should be addressed in your airport regulations and proper safety practices enforced.

6.3 Hazardous Materials and Fuel Systems -

This discussion on fueling systems is limited to general principles and guidelines. It is recommended that those having systems prepare detailed operating procedures for first-line personnel.

Aviation Fuel Identification

Jet Fuels - Jet fuels contain no color dyes. For the purposes of this discussion, whenever the term Jet A is used, the same information applies to Jet A-1. Jet A and Jet A-1 are identical except for the freezing points identified here:

1. *Jet A* - A relatively high flashpoint distillate of the kerosene type having a -40°C (-40°F) freezing point (max.).
2. *Jet A-1* - A kerosene type fuel, similar to Jet A, but having a -50°C (-58°F) freezing point (max.).

Aviation Gasoline (AvGas) - The lean mixture octane or performance numbers recognized in all military and commercial specifications identifies the three grades of AvGas listed here:

<u>AvGas Grade</u>	<u>Color</u>
100	Green
100LL	Blue
80	Red

Basic Principles of Fuel Handling -

Aviation fuels are transported in various ways (e.g. pipelines, ships, barges, and vehicles) between the refinery and the aircraft. Regardless of the method of transport, there are

basic principles of aviation fuel handling that apply to all systems. The goal is to safely supply clean, dry fuel to aircraft.

Contamination Exclusion - It is important to prevent water and solid contamination from entering the fuel. Contamination can enter from external sources or can be generated within the system. Internal contamination can be caused by water forming into minute drops that originate from dissolved water present in the fuel. Internal contamination may also be in the form of rust, lint, scale, internal coating, fibrous matter, and elastomers found in storage tanks, pipelines, transports, fuel trucks, hydrant vehicles, and hoses.

The presence of internally generated contaminants can be reduced by the use of good housekeeping practices such as the continuous removal of entrained water and solids. These practices are further enhanced by the use of non-ferrous materials in contact with the fuel.

Continuous Cleanup - A continuous cleanup operation is necessary to maintain high product quality. This ongoing operation is completed through many steps from the refinery to the aircraft. Generally, cleanup is executed by mechanical devices, such as filter separators, that remove entrained water and solid contaminants at various steps in the fuel handling procedure. Mechanical cleanup devices are adequately protected by other steps in the operation if a malfunction does occur.

Employing Safeguards - It is necessary to employ certain safeguards for safe fuel handling at airports. These safeguards may include installing shutdown features or mechanical couplings that prevent fuel mixing. Implementing techniques for reducing static electricity may also be necessary. Using selective couplings is

important to ensure different types and grades of fuel are not mixed. All handling equipment should be conspicuously marked to indicate the type and grade of fuel. Jet fuel and AvGas facilities should be completely independent systems. There should be a complete mechanical separation between fuel types. Be cautious of block valves, which can leak or be opened inadvertently.

Filtration - Filtration of AvGas should be provided at the final dispensing facility before the fuel is placed aboard an aircraft. A filter/separator is usually installed to provide filtration of jet fuel for storage at an airport. Filtration must be provided outside of storage through two units in a location where the product is not exposed to contamination between the first filter/separator and the aircraft.

Operational Checks and Records - Precautions must be taken to prevent contamination of the tanks and piping equipment. Daily handling procedures should be designed to reveal any malfunctions or other conditions indicating that corrective action is necessary. The following information covers items that the operator of an airport fueling facility should check on a daily, weekly, monthly and demand basis. These inspections should include not only the quality control items, but also safety and inventory control items. Complete and accurate operating logs of all phases of the fuel handling system should be developed to fit the needs of each particular operation.

Daily Inspections - The following items should be checked on a daily basis, and corrective action or maintenance should be performed as necessary:

- ✓ Check the storage tank floating suction test cables for freedom of operation.
- ✓ Check the bottoms of all storage tanks

for water using a visual test.

- ✓ Check filter water drains for contaminants after each fuel deposit; draw off any accumulation of water.
- ✓ Check and record filter/separator and contaminant monitor for differential pressure while operating flow conditions.
- ✓ Check and record the fuel quantity in each storage tank.

Weekly Inspections - The following items should be checked on a weekly basis and corrective action or maintenance performed as necessary:

- ✓ Check and clean all strainer baskets, replacing broken strainer baskets.
- ✓ Check and clean the screens in all bottom loading and other hose nozzles; replacing any broken equipment.
- ✓ Visually inspect all bottom loading and other hoses for abrasions, separations or soft spots. Weak hoses should be replaced.
- ✓ Inspect all fire extinguishers for broken seals, proper pressure and recharge date. Recharge as necessary.

Monthly Inspections - The following items should be checked on a monthly basis and corrective action or maintenance performed as necessary:

- ✓ Check the lubrication and the oil level of the pumps, motors, hose reels and other machinery. For hose reels and lubricated valves, use lubricants that will not clog fuel screens in aircraft systems at any temperature. Make sure the correct seasonal grade of lubricant is used.
- ✓ Check the action of all valves.
- ✓ Check the condition and electrical continuity of the static grounding clips, wires, and bonds at the loading racks, pits and other points of fuel transfer.

On-demand Inspections - The following items should be checked on a demand basis and corrective action or

maintenance performed as necessary:

- ✓ Check the entire fueling facility for the clarity and correctness of the product identification system.
- ✓ Conduct a Millipore check of the cleanliness level of the jet fuels discharged at the downstream side of filter/separator.
- ✓ Conduct a check of monitoring devices as required by the manufacture.

6.4 Loading and Unloading - Loading and unloading of passengers and cargo are potentially hazardous operations and necessary controls are the responsibility of airport managers. Airport employees must be familiar with airport rules and must advise transient pilots on local policies. Rules to be developed in this area should consider:

Restraint. Chocks (with pull ropes) should be provided by the airport or FBO for all transient aircraft and used during loading and unloading.

Engine operation. Good safety practice dictates that engines be stopped when loading or unloading passengers or cargo. In the event engines must be operated during loading or unloading, specific areas for such operation should be designated and strictly enforced.

Equipment. Forklifts, tugs and other loading equipment used on the public ramp should be subject to control by the airport manager. Specification of color, lights, speed and operator qualifications are proper concerns of the airport manager.

6.5 Vehicle Control and Security - A major concern for all airport managers should be the control of vehicles on the airfield portion of the airport. Besides presenting a collision hazard to aircraft, vehicles may be used to conceal certain other illegal activity. Since the airport owes renters and lessees protection for their property, security should be a major concern. Items subject to pilferage are usually too bulky to be carried away by pedestrians, but could easily be concealed in a car.

Most authorities generally agree that

vehicular access to the "flight line" should be limited to official vehicles (minimum number on official business); aircraft owners in hangar areas; loading and towing vehicles and temporary access to pick up and deliver passengers and/or cargo. Parking inside aircraft owner's hangar space is usually permitted by the hangar renter and persons designated by him. Parking on ramps or taxiways designed for aircraft movement should be prohibited.

6.6 Unusual Activities - Provisions for waiving regulations under certain specified conditions should be included in the original preparation.

Events such as open houses, air shows, parachute jumping and the like are valuable and desirable airport activities.

Contingency plans to cover each event of this type should



be drawn up and approved well before events are scheduled, afterwards may be too late.

If airport rules and regulations have been well thought out and correctly written, few exceptions or waivers should be required (except for unusual events). Nevertheless, the authority to grant waivers and clear specifications of the persons holding waiver power should be spelled out in the directives themselves. Waivers should be granted only after careful consideration and only for a specific, limited duration. If a long term waiver is required, it indicates the regulation is probably not necessary.

7.0 Facilities Repair and Maintenance

An existing general aviation airport represents a tremendous investment by the taxpayers of a community. It is the obvious responsibility of the airport manager to ensure that the taxpayer's investment is protected and nurtured.

In many cases, the immediate responsibility

for upkeep of some airport buildings is shared with renters, while the upkeep of the runways, taxiways, lights, ramps and the like are usually the sole responsibility of the airport manager. Even though some facilities are leased or rented, the manager must at least assume the responsibility for policing the facilities to ensure that contracted maintenance and repairs are, in fact, being carried out.

Well-maintained facilities not only ensure greater longevity, they perform a major role in promoting aviation and the use of the airport.



Airports with painted buildings, adequate pavement and comfortable pilot and visitor facilities are community assets and worth the cost of keeping them in good condition. Unfortunately, some communities have chosen to ignore or, in some cases, just forget to maintain their airport property. Some managers and others speak of airport buildings and equipment as “government owned” obviously ignoring the fact that they and all citizens are the government and will ultimately foot the bill for neglect of their property.

Since every general aviation airport is different in size, layout, age, staff and resources, no hard and fast rules for airport maintenance can be made. Some of the items that we recommend as appropriate activities include:

- Implementing an Airport Self-Inspection Program (See Section 5C of Vol. II)
- Ensuring that the airport facilities and equipment are furnished the necessary electrical energy
- Ensuring that other utilities are operating effectively
- Repairing runways, taxiways, hangars, other buildings, roadways and grounds
- Performing custodial and general janitorial services

- Operating, repairing and maintaining airport vehicles, fixed engines and other operating engines and equipment
- Providing storage for preservation and issuance of supplies and materials
- Maintaining grounds

B. PROMOTING THE AIRPORT

1.0 Manager's Airport Promotion

The airport manager is one of the leading advocates for the aviation industry.



Taking pride in the airport and spreading the word by mouth and media is an excellent way to also promote your airport. The airport is a public utility operated for the benefit of all citizens. The airport manager plans public displays, open houses and air shows to welcome the community to get involved in aviation. He/she is the community's aviation expert. Keeping a close grasp on the financial situation of the airport is an interesting part of aviation management. Another responsibility is maintaining efficient use of funds by not wasting time and money. An ethical manager will always report accurate information on time to the appropriate sources. He/she plays the role of a public servant focused on the goals of the community, not the airport's profitability. It is the airport manager's duty to remain informed on aviation matters and be prepared to offer assistance and advice on aviation when required.



The manager is available at all times to cope

with any airport emergency. A manager who is also the fixed base operator is cautious of decisions which may create a conflict of interest for the airport and keeps the well being of the airport in mind. One of the most difficult feats to accomplish is maintaining good relations with municipalities, authorities, and other governing bodies. The job requirements of the governing body and the manager should be clearly defined and in writing in order to prevent any miscommunication between the two. A manager is an effective communicator who has the ability to understand the legal jargon of political meetings and documents.

The manager must first identify the public he wishes to reach, the objectives of the promotional activity and the means by which those objectives are to be met.

Neither this document nor any other will make an instant PR expert of the average airport manager. We have, however, solicited the views of some very competent people in the advertising, marketing and media relations fields and offer here their suggestions for the benefit of Tennessee's airport managers. The result desired of all promotional activity is that of greater public acceptance of aviation, of the airport and its activities in the community and an understanding of the economic and other public benefits of a community airport. Activities that promote these ends should be pursued vigorously by all airport personnel.

2.0 Media Relations



Before planned promotional activities can be carried out, it is very important that all employees of the airport (those under the direction of the airport manager) fully understand the role of the airport in the community, their role in the airport's operation and some of the factors that are of concern to management. Employees

should be thoroughly indoctrinated on their role in connection with the media. Most airport managers have found it wise to prohibit public statements by anyone other than designated personnel for two reasons. First, speculation on issues is sometimes dangerous and is not always properly labeled. Secondly, it is important that everyone is on the same page and dispersing information through a single source aids in that goal. Periodic meetings between the manager and employees, as well as indoctrination of new employees, are strongly recommended.

We cannot stress too strongly the importance of "playing it straight" in all promotional and informational activities. The media is not necessarily an adversary. In contact with the media, the manager should answer questions truthfully, and without embellishment. In all cases, the term "no comment" is to be avoided. It is better to indicate that a matter is still under investigation, or that the data is incomplete. It also acceptable to say you need to check on a matter and then get back with them with the information they requested. Despite the insistence of reporters, some matters are not in the public domain. In such cases, soliciting advice from the community/county attorney before agreeing to an interview would be desirable. This is particularly important in instances where legal action is possible or probable.

In all other cases, we suggest that the highest ranking person in the airport management group make official public statements. Even though an airport may have a paid or volunteer public relations advisor, the extra "weight" of announcements from the top is generally desirable.

2.1 Advertising - Few general aviation airports have budgets for advertising in the sense of buying newspaper, radio or TV commercials, even though in many cases, a small budget for these purposes might be desirable.

Yet the airport manager has a responsibility for promoting the airport.

In most cases, this responsibility can best be carried out by ensuring that news media are appraised of "happenings" as they occur. Almost every newspaper editor and radio/TV reporter is on the lookout for news items, particularly if local people are involved.

Everyday occurrences such as pilots soloing or getting licenses, new equipment installations, unusual aircraft visitors (experimental, Warbirds, aerobatic, etc.), Explorer Scout or CAP activities all form bases for local news stories which act as advertisement for airports.



In many cases, it will be necessary for the manager to seek out and make media representatives aware of newsworthy airport activities. Breakfast or luncheon meetings have proven to be very good ways for the manager and often very busy airport sponsors to meet with media representatives on an informal basis.

Direct advertising may be advisable if the airport has been dormant or neglected. Some support in the forms of advertising and news releases may, on occasion, be obtained from the General Aviation Manufacturing Association (GAMA) or individual aircraft manufacturers. If such material is not appropriate, paid newspaper, billboard, radio and/or TV ads announcing the new or revitalized airport, new services, new operators or the like might be appropriate.

3.0 Personal Communication

A major problem in any business or governmental activity is ineffective communication. The problem is very serious

when the communication breakdown is on the part of the manager. Employees who don't understand what the boss wants are usually ineffective. Customers or clients who don't know or can't understand the product or service offered take their business elsewhere. Misunderstood comments published in newspapers or shown on TV are very embarrassing to all concerned.

We consider the ability to communicate in person or in writing to be a major



developmental goal of all present and prospective managers. It is so important that managers who doubt

their ability to communicate effectively make an effort to acquire further communicative skill or always communicate through a public spokesman. Many colleges, universities and most high school adult education activities offer courses in public speaking and business communications that are very worthwhile.

The responsibility for communicating is that of the manager. He/she does not have to do all of it personally. Any tool they use to do the job is acceptable. Our experience, however, is that if the manager is truly enthusiastic about his/her airport and really wants to promote it, any lack of effectiveness he/she may feel in their ability to communicate may be more imagined than real. A person with a story to tell can usually manage to get it across if he/she is sincere.

4.0 Trade Communications

Up to this point, we have discussed promotional activities within and generally for the community. An airport must, however, be somewhat concerned with the transient trade as well as local concerns. One of the better ways to become known is to advertise in trade publications, and many general aviation airports regularly do just

that. A somewhat less expensive method is to participate in promotion of aviation related products and let the manufacturer do some advertising for the airport. Both activities are perfectly legitimate and should be considered.

Unusual operations, exceptionally good service, scenic location and the like are grounds for news stories in trade publications which have immediate and far reaching effects.

5.0 On-Site Promotion

Airports have all sorts of interesting things for people to see. One of the best gimmicks for promoting an airport is the airport itself. Open houses create some extra work for all concerned, but are usually fun, bring out a lot of people and are in the long run very effective promotional devices. An aviation week or open house is an excellent way to encourage the citizens of the community to visit the facilities to learn and hopefully appreciate the benefits that are available to their community from airport operations.



The promotional activities could involve cooperative efforts with the local schools and colleges. This effort might include visits by various grade levels, and tours could be set up for the students to see the airport and be briefed on the economic impact that the airport has on the area. All students should have an opportunity to see each basic component of an airport and sit in the cockpit of an airplane. It is nice to have handouts, pencils, plastic airplanes, etc.—with of course, the FBO's and airport's name on them. Students will be voters of tomorrow and very well could have an influence on their parent's attitude toward the airport because of an exciting visit. Additional promotion can be arranged by developing flight courses and ground school courses for the schools and providing assistance to teach them. Some other promotional ideas are:

- A Art Contests
- B Air Shows
- C Plane Rides
- D Aviation Association Meetings
- E Special Community Service Events

Any opportunity for working together with other Tennessee airports to promote flying activities or to solve mutual problems should be taken full advantage of whenever possible. In many cases, a "regional" spirit could be more productive than a purely local effort.

A. ACRONYMS AND DEFINITIONS

Air Traffic Control (ATC) - A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.

Approach Lights - An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended centerline of the runway on final approach for landing.

Apron - A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading and unloading passengers or cargo, refueling, parking or maintenance.

Automated Surface Observation System (ASOS) - A primary surface weather observing system designed to provide continuous minute-by-minute observations and weather forecast activities. (Federal Only)

Automated Weather Observation System (AWOS) - System consisting of various sensors, a processor, a computer-generated voice and a transmitter to broadcast local, minute-by-minute weather data directly to the pilot.

Common Traffic Advisory Frequency (CTAF) - Pilots use the common frequency to coordinate their arrivals and departures safely, giving position reports and acknowledging other aircraft in the airfield traffic pattern.

Distance Measuring Equipment (DME) - Equipment (airborne and ground) used to measure, in nautical miles, the slant range of an aircraft from the DME navigational aid.

Glide Slope - A component of the Instrument Landing System (ILS) that provides vertical guidance for aircraft during approach and landing.

Global Positioning System (GPS) - A space-based radio positioning navigation and time-transfer system. The system provides highly accurate position and velocity information and precise time on a continuous global basis to an unlimited number of properly equipped users. The system is unaffected by weather and provides a worldwide common grid reference system.

Ground Communications Outlet (GCO) - The GCO is used at non-towered airports employing a telephone line and a radio frequency to provide pilots with convenient access from their aircraft to Flight Services for efficient clearance delivery and flight plan closure.

High, Medium or Low Intensity Runway Lighting (HIRL, MIRL, LIRL) - A system of lights that outline the edges of the runway during periods of darkness or restricted visibility conditions.

High, Medium or Low Intensity Taxiway Lighting (HITL, MITL, LITL) - A system of lights that outline the edges of the taxiways during periods of darkness or restricted visibility conditions.

Instrument Landing System (ILS) - A precision approach system designed to provide an approach path for exact alignment and descent of an aircraft on final approach to a runway.

Instrument Flight Rules (IFR) - A set of rules governing the conduct of flight under instrument meteorological conditions.

Localizer - A component of the ILS which provides course guidance to the runway.

Middle Marker - A component of the ILS which defines a point along the glide slope at or near the point of decision height.

NAVAID - Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight.

Next Generation Automated Weather Observation Station (NEXWOS) - An advanced version of an automated weather observation station.

Non-Directional Beacon (NDB) - A radio beacon transmitting non-directional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine bearing to or from the radio beacon and "home" on the track to or from the station.

NOTAM - A Notice To Airmen containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

Obstacle Free Zone (OFZ) - A three dimensional volume of airspace protecting the transition of aircraft to and from the runway.

Object Free Area (OFA) - An area that is required to be free of any object penetrations except for frangible visual navigational aids that are required to be located in this area because of their function. The OFA has a pre-determined length and width that is centered on the runway centerline.

Omnidirectional Approach Lighting System (ODALS) - Lighting system consisting of seven omnidirectional flashing lights located in the approach area of a nonprecision runway.

Outer Marker - A component of the ILS system at or near the glide slope intercept altitude, normally located four to seven miles from the runway threshold on the extended centerline of the runway.

Precision Approach Path Indicator (PAPI) - A visual glide slope indicator installed in a single row of either two or four light units.

Remote Communications Outlet (RCO) - An unmanned communications facility remotely controlled by air traffic personnel.

Rotating Beacon - A visual NAVAID alternating white and green flashes indicating the location of an airport.

Runway End Indicator Lights (REIL) - Two synchronized flashing lights, one to each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

Runway Protection Zone (RPZ) - A trapezoidal-shape area centered about the extended runway centerline that is used to enhance the protection of people and property on the ground.

Runway Safety Area (RSA) - A defined surface surrounding the runway suitable, for reducing the risk of damage to airplanes in the event of an undershoot, overshoot or excursion from the runway.

Segmented Circle - A system of visual indicators designed to provide traffic pattern information to pilots at airports without operating control towers.

Tactical Air Navigation (TACAN) - An ultra-high frequency electronic air navigation aid which provides suitably equipped aircraft a continuous indication of bearing and distance to the TACAN station.

Unicom - A non-government communication facility.

Visual Approach Slope Indicator (VASI) - A lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing.

Visual Flight Rules (VFR) - Rules that govern the procedures for conducting flight under visual conditions.

VOR - A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the National Airspace System. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature.

VORTAC - A navigation aid providing VOR azimuth, TACAN azimuth and TACAN distance measuring equipment (DME) at one site.

B. CONFERENCES/REGIONAL MEETINGS

1.0 Tennessee Airports Conference



The Tennessee Airports Conference, held annually in late summer, is coordinated by the Aeronautics Division. Local and governmental officials, airport managers and fixed base operators attend sessions and workshops at the event.

The sessions focus on new technologies, legislation, current events or subjects of interest. An area is dedicated for airport sponsors to display and promote their local airport. The conference is normally held over a two-day period.

Two types of awards are presented at the conference. The following is a brief description of each award and the criteria involved in the award selection.

Each year the Tennessee Aeronautics Commission (TAC) recognizes outstanding achievements and contributions to aviation in Tennessee by presenting the **Award of Excellence** in five categories:

- Airport of the Year
- Most Improved Airport
- Governing Body of the Year
- Airport Manager of the Year
- Career Contributions to Aviation

To receive an award, the individual, organization or airport must have set an example for others through leadership, dedication, persistence and an overall commitment to excellence.

The Tennessee Aeronautics Commission recognizes that success is seldom achieved without the combined, cooperative and ongoing efforts of many people and groups.

In presenting the awards, whether to an individual, organization or airport, the commission seeks to recognize all that have contributed.

In 1992 the Tennessee Department of Economic and Community Development, the Tennessee Department of Transportation and the Tennessee Aeronautics Commission initiated a new award to recognize Tennessee airports with "facilities and services that reflect community pride and commitment to quality."

Criteria for the **Front Door Award** include:

- General appearance of the airfield, buildings and grounds
- Availability and quality of services for passengers, aircraft and crews
- Availability and quality of information about the airport and the community
- Cleanliness and level of maintenance of areas used by the passengers and airport visitors
- Courtesy and professionalism displayed by airport personnel
- An overall impression of community pride and a commitment to quality

2.0 Tennessee Mid-South Aviation Maintenance Conference



One of the longest running aviation maintenance conferences in the country, the Tennessee Mid-South Aviation Maintenance Conference, is held every March in Nashville. It is dedicated to enhancing the

knowledge of aviation maintenance technicians throughout Tennessee and the mid-south area.

Origins of the conference date back to the mid-1960s when the former Tennessee Bureau of Aeronautics personnel realized the

need for an educational program of this type. It was held in the state's aircraft hangar until the early 1990s when size, noise and security issues dictated the move to larger facilities. Since then, it has been held at a local convention facility providing larger exhibiting and presentation space and has continued to grow in terms of exhibitors and attendees.

An outgrowth of the conference's activities has been the presentation of the annual **Tennessee Aviation Maintenance Technician of the Year Award**. This award recognizes the outstanding contribution an individual has made over the years in the state in the area of aviation maintenance.

3.0 Airport Capital Improvement Plan Roundtables

Annual roundtable meetings are held to discuss short and long-range airport development. The primary purpose is to update each airport's Capital Improvement Plan (CIP). Participation in the ACIP

program is required if an airport is planning to submit projects for funding consideration.

C. PUBLICATIONS / INFORMATIONAL RESOURCES

- *Aeronautical Chart* - Printed every two years for the convenience of flying in Tennessee, but is not to be used for navigational purposes.
- *Airport and Aviation Official Directory* - Updated and published annually and provides the contact information for each public-use airport.
- *Airports Directory* - Published every two years to provide information on the public-use airports in Tennessee.
- *Internet Web Sites* - The State of Tennessee: <http://www.tn.gov>.
- TDOT, Aeronautics Division: <http://www.tdot.state.tn.us/aeronautics/>
- *Aviation Newsletter* - Tennessee Aviation is published four times a year.

D. AIRPORT MANAGEMENT CHECKLIST
(suggested items)

Airport Plans	Date	Remarks
Airport Layout Plan Set		Typically, the plan set is updated every 5 – 10 years with a major airport development. An Exhibit A and/or Land Use Map may also be part of this set.
Airport Layout Drawing	_____	
Terminal Area Drawing	_____	This drawing may be combined into the Airport Layout Drawing or be a separate page.
Airspace Drawing	_____	
Inner Portion of the		
Approach Surface Drawing	_____	
Approach Drawing	_____	
Land use & Property Map	_____	
Emergency & Security Plan	_____	Review annually, update with revisions.
Capital Improvement Plan	_____	Review and update annually.
Other	_____	
		Example (airport marketing plan).

Licenses	Date	Remarks
State “Public Airport”		
Renewal Application	_____	Update annually.
FCC License Renewals		Most FCC licenses are issued for 5 years.
<i>NAVIGATIONAL</i>		
AWOS	_____	
NAVAIDS	_____	
LOC	_____	
G/S Antenna	_____	
DME	_____	
NDB	_____	
VOR	_____	
<i>COMMUNICATION</i>		
GCO	_____	
Unicom	_____	
Other	_____	

D. AIRPORT MANAGEMENT CHECKLIST (CONTINUED)

Property Management	Date	Remarks
Exhibit "A" Property Map	_____	Official property map for airport.
Land Use Plan/Zoning	_____	Used to identify existing and proposed zoning surrounding the airport.
Height Limitation Zoning	_____	Review annually or with Ordinance airspace drawing update.
Pavement Management Plan	_____	Maintain inspection reports weekly, review annually.
Fuel System	_____	Inspections, permits as required.
Other	_____	

Rules/Leases/Agreements	Date	Remarks
Airport Minimum Standards for Commercial Aeronautical	_____	Review annually, update as necessary.
Aeronautics Service Provider	_____	Review annually; reevaluate every 5 years or less. Include escalation clause.
Application Process and Forms	_____	Review and change as necessary.
Title VI Information	_____	Identify coordinator, display posters. See brochure for other responsibilities.
DBE Information	_____	Display DBE information; advertise annually.
Rules and Regulations	_____	Review annually, update as necessary.
Airport Manager Agreement	_____	Review annually.
Airport Tenant Lease		
Hangar	_____	Review per contract conditions.
Ground	_____	Review with contract conditions.
Tie Downs	_____	Review with contract conditions.
Other	_____	Example – farming, military, contracts, etc. Review as necessary.

**E. FAA ADVISORY CIRCULARS (ACs)
REFERENCED AND THEIR PURPOSE**

- 1) AC 90-66, *Recommended Standards Traffic Patterns & Practices for Aeronautical Operations at Airports without Operating Control Towers*

Purpose: This advisory circular calls attention to regulatory requirements and recommended procedures for aeronautical operations at airports without operating control towers. It recommends traffic patterns and operational procedures for aircraft, lighter than air, glider, parachute, rotorcraft and ultralight vehicle operations where such use is not in conflict with existing procedures in effect at those airports.

- 2) 150/5070-6, *Airport Master Plans*

Purpose: This advisory circular provides guidance for the preparation of master plans for airports that range in size and function from small general aviation to large commercial service facilities. The intent of this AC is to foster a flexible approach to master planning that directs attention and resources to critical issues. The scope of each master plan must be tailored to the individual airport under evaluation.

- 3) 150/5100-17, *Land Acquisition and Relocations Assistance for Airport Improvement Program (AIP) Assisted Projects*

Purpose: This advisory circular provides guidance to sponsors of Airport Improvement Program (AIP) assisted projects to develop their land acquisition and relocation assistance procedures in conformance to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PI 91-646, as amended). This change incorporates the updates to implementing federal regulations 49 CFR Part 24 and all prior changes to the AC, number 1 through 5.

- 4) 150/5190-4, *A Model Zoning Ordinance to Limit Height of Objects around Airports*

Purpose: This advisory circular provides

a model zoning ordinance to be used as a guide to control the height of objects around airports.

- 5) 150/5190-6, *Exclusive Rights at Federally-Obligated Airports*

Purpose: This advisory circular provides basic information pertaining to the Federal Aviation Administration's (FAA) prohibition on the granting of exclusive rights at federally-obligated airports. The prohibition on the granting of exclusive rights is one of the obligations assumed by the airport sponsors of public airports that have accepted federal assistance, either in the form of grants or property conveyances. This AC provides guidance on how an airport sponsor can comply with the statutory prohibition on the granting of exclusive rights. Section 1 explains FAA's policy on exclusive rights, the statutory basis for the policy and exceptions to the policy. Section 2 provides an overview of how the FAA ensures compliance with applicable federal obligations.

- 6) 150/5190-7, *Minimum Standards for Commercial Aeronautical Activities*

Purpose: This advisory circular provides basic information pertaining to the Federal Aviation Administration's (FAA) recommendations on commercial minimum standards and related policies. Although minimum standards are optional, the FAA highly recommends their use and implementation as a means to minimize the potential for violations of federal obligations at federally obligated airports.

- 7) 150/5200-28, *Notices to Airmen (NOTAMS) for Airport Operators*

Purpose: This advisory circular provides guidance on using the NOTAM system for airport condition reporting.

- 8) 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports*

Purpose: This advisory circular provides guidance on certain land uses that have the potential to attract hazardous wildlife

on or near public-use airports. It also discusses airport development projects (including airport construction, expansion and renovation) affecting aircraft movement near hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

9) 150/5300-13, *Airport Design*

Purpose: This advisory circular contains the Federal Aviation Administration's (FAA) standards and recommendations for airport design.

10) 150/5370-2, *Operational Safety on Airports During Construction*

Purpose: Aviation safety is the primary consideration at airports, especially during construction. This AC sets forth guidelines for operational safety on airports during construction. It contains major changes to the following areas: "Runway Safety Area," paragraph 3-2;

"Taxiway Safety Areas/Object-Free Areas," paragraph 3-3; "Overview," paragraph 3-4; "Marking Guidelines for Temporary Threshold," paragraph 3-5; and "Hazard Marking and Lighting," paragraph 3-9.

11) 150/5380-6, *Guidelines and Procedures for Maintenance of Airport Pavements*

Purpose: This advisory circular provides guidelines and procedures for maintaining rigid and flexible airport pavements.

12) 150/5380-7, *Airport Pavement Management Program*

Purpose: This advisory circular discusses the Airport Pavement Management System (APMS) concept, its essential components and how it can be used to make cost effective decisions about pavement maintenance and rehabilitation.