



FAA 90 Day Safety Review



September 16, 1996





U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Deputy Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

The Honorable David H. Hinson
Administrator
Federal Aviation Administration

Dear Mr. ~~Hinson~~ *David*:

Aviation is a dynamic industry. FAA's challenge has always been to remain attune to changes, to anticipate trends, and to adjust and design new strategies for improving safety. Under your leadership, this agency has responded: a single level of safety now applies to commuters and air carriers; personnel and procurement reform affords us new agility to evolve along with the industry and technology; management initiatives, such as the Challenge 2000 review of regulation and certification, provide a blueprint for the next century of safety oversight.

Ninety days ago, you asked me to lead a team to once again ask ourselves: is there more we need to do, today, to improve the safety of the aviation system? In keeping with your request, the focus of our efforts has been on FAA's flexibility and efficiency in deploying its resources in response to varied fleet mixes, business practices like substantial outsourcing, rapid growth, or other changes by an airline.

In the spirit of re-inventing Government, FAA and DOT employees were assembled--managers, field inspectors, lawyers, engineers--employees with frontline, day-to-day responsibility for safety oversight. Along with their collective aviation knowledge and experience, the teams also reached out to the industry and other Federal agencies to seek input through interviews and written comments. We owe many thanks to these employees. Throughout this process, labor has worked with us in partnership on the teams--Jack Johnson and Jim Kelly of the Professional Airways System Specialists (PASS) were important voices in our discussions. I must also acknowledge my deep gratitude to all of the members of my Executive Steering Committee, with particular thanks to former NTSB Chairman Carl Vogt for the technical expertise, commitment to safety, and wisdom he brought to our deliberations.

The report contains 6 principal recommendation areas, over 30 supporting recommendations, and numerous implementation strategies. Consistent with our charter, these recommendations focus on short- and mid-term actions. These actions, if adopted, will advance the agency's drive to target resources more strategically and to respond more quickly to the changing safety needs of the industry. Among the many important recommendations, I would like to highlight a few:

*increasing the number of safety inspectors needed to do the job today and to meet future workload requirements.

*creating a national safety certification team to assist local field offices in processing new air carrier certifications and conducting safety audits.

*increasing safety surveillance requirements and growth management of new entrant carriers.

*using our new authority under personnel reform to remove the disincentives in inspector pay classification that impedes assigning our most talented and seasoned inspectors to new entrants which have the most to gain from such guidance and expertise.

*upgrading and accelerating the introduction of information management technology to the field and providing the necessary training so inspectors have the right information at the right time.

*improving coordination between the Department of Transportation and the FAA for new entrant certification and imposing user fees to discourage frivolous applications which drain and distract valuable safety resources.

Some of the recommendations, once implemented, will introduce efficiencies and cost savings; others can be adopted by re-deploying existing resources. While we have examined the resource impacts of these recommendations, further work will be necessary during the implementation phase. We do know that the measures necessary to meet the changing and growing needs of this industry, simply require more budget flexibility and more resources than we have today. Unfortunately, the inescapable fact is that under the current budget system, the more likely scenario is that our budget will decline at a time we need it to grow. FAA financial reform remains, in the end, the most significant step for advancing safety.

I believe this review has affirmed that we have a highly dedicated and talented work force that is committed to safety. Given the flexibility and resources needed to do the job, we can achieve the safety goals we have set for ourselves and for which the public demands our complete success.

Respectfully submitted,



Linda Hall Daschle

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EXECUTIVE SUMMARY

On June 18, 1996, Federal Aviation Administration (FAA) Administrator David Hinson announced that Deputy Administrator Linda Daschle would lead a task force to conduct a 90-day safety review examining areas of immediate concern to the agency, especially with respect to safety inspections, and would make recommendations which could be implemented in the near term.

The review examined Federal regulations and FAA's management of oversight of commercial airlines engaged in substantial outsourcing of maintenance and training functions, as well as the flexibility with which FAA inspection resources can be deployed effectively in response to varied fleet mixes, rapid growth, or other changes by a certificate holder. (See Appendix E for work statement.)

The task force categorized issues into six general areas: 1) Certification Policy and Process; 2) Resource Targeting to Address Safety Risks; 3) Newly Certificated Air Carrier Operations and Growth; 4) Outsourcing and Varied Fleet Mix; 5) Inspector and Air Carrier Guidance Material; and 6) Inspector Resources.

Following are summaries of the issues and recommendations contained in the six categories. All recommendations are targeted for near-term implementation. These recommendations were coordinated to be consistent with the recommendations of the Challenge 2000 report. The Challenge 2000 report addresses long-term challenges and provides recommendations for positioning the Agency's Regulation and Certification Organization (AVR) for the 21st century.

ISSUE 1: CERTIFICATION POLICY AND PROCESS

The air carrier certification process places strict requirements on applicants to ensure the viability, quality, and safety of potential operators. The number of new applicants and the complexity of their business practices (i.e., extensive outsourcing and use of varied fleet mixes) have, in recent years, heightened the importance of having coordinated FAA and the Office of the Secretary of Transportation (OST) certification processes and policies. Additionally, the strain on government resources required to process new applicants is made worse when there are air carrier failures and when the agency expends an inordinate amount of resources on ill-prepared applications. Assisting unprepared or unqualified applicants detracts significant resources from other more critical safety functions.

Recommendation 1

Rigorously enforce OST and FAA application procedures.

- 1.A Stringently enforce existing requirements on new air carrier applicants by requiring the filing of a complete application with OST.**
- 1.B Create an FAA national certification team to assist local Flight Standards District Offices in processing new air carrier certifications similar to the proposed Challenge 2000 Centers of Excellence. Use this national team to add FAA expertise to the OST certification process by acting as a certification liaison between FAA and OST.**

- 1.C Require FAA to routinely follow the “Gate Concept” in processing FAA certificate applications.**
- 1.D Require the applicant to file a copy of portions of the OST application material with the Flight Standards District Office with which it intends to file its application and to file a copy of the FAA Preapplication Statement of Intent (PASI) with OST, along with any other documents that describe the type and number of aircraft to be operated.**
- 1.E Limit the amount of assistance OST and FAA provide to unprepared or unqualified applicants.**
- 1.F Support the imposition of FAA application fees and the increase of OST fees for initial certification of new applicants.**

ISSUE 2: RESOURCE TARGETING TO ADDRESS SAFETY RISKS

The ability of the FAA to continue to reduce aviation accidents and incidents is predicated on its ability to identify systemic safety issues and to solve them before they result in serious incidents. The only way to move to zero accidents is through changing the FAA’s methods of assessing risk and using new analysis techniques on more complete data. This approach makes use of systems such as Safety Performance Analysis System (SPAS) and Global Analysis and Information Network (GAIN) to identify trends that may indicate systemic safety issues. This approach will allow the FAA to use more effectively inspection, surveillance, and enforcement resources where they are most likely to improve safety. Conversely, it will allow FAA to divert resources from activities where they are unlikely to find safety issues. This will enable the FAA to increase safety during a time of increasing air transportation activity without significantly increasing staffing levels. It also changes the relationship between inspectors and air carriers to be partners in safety, thus leveraging FAA resources. Under this approach the Certificate Management Office (CMO) or unit can better utilize geographic inspectors where they are needed.

Recommendation 2

Improve air carrier surveillance systems and follow-up activities to mitigate safety risks and increase the leverage of FAA resources. Ensure that safety information reaches the right people at the right time and continue efforts to improve data quality and analysis.

- 2.A Initiate a project to make surveillance of air carriers more systematic and targeted to deal with identified risks. The current system should be improved by requiring comprehensive annual surveillance plans for each air carrier. These plans should be managed by principal inspectors to validate their respective air carrier’s systems and to target dynamically inspections throughout the year. Guidance should be provided to principal inspectors on when to reduce, or increase, planned surveillance based on safety analyses. Guidance should also be developed to link enforcement policy with targeted surveillance.**
- 2.B Provide for increased specialization and more efficient use of geographic inspectors. Geographic inspectors should receive their work program from the Certificate Holding District Office (CHDO) based on the identified targeted inspection needs. Limits should be**

set on the number of air carriers assigned to a single geographic inspector, and each inspector's territorial jurisdiction should be increased.

- 2.C** Further develop air carrier partnership programs that promote safety data collection, carrier implementation of best practices, and methods for communicating and correcting potential safety risks.
- 2.D** Develop an enforcement strategy that will maximize utilization of inspector and attorney resources for the greatest safety and efficiency.
- 2.E** Create a centralized information management function within AVR. This organizational element should (1) disseminate safety information as directly as possible within Flight Standards and across organization lines and (2) assist information recipients in the interpretation of data. Information to be disseminated should include SPAS alerts to non users, the National Aviation Safety Inspection Program (NASIP) and the Regional Aviation Safety Inspection Program (RASIP) findings, Aviation Safety Reporting System (ASRS)¹, and the National Aviation Safety Data Analysis Center (NASDAC) safety information. The purpose of disseminating this information is to assist principal inspectors and other customers in targeting surveillance resources and taking necessary corrective actions to mitigate safety risks.
- 2.F** Develop a strategy and implement a quality assurance program that promotes the integration, continued analysis, and evaluation of present and developmental automation and telecommunication systems and processes. This program would ensure that improved quality of information is obtained within existing and future databases. This includes modifying systems to capture the data and develop analytic tools needed to monitor air carrier outsourcing activities and to identify potential risks related to air carrier growth rates.
- 2.G** Identify the training and job-aid requirements necessary to ensure that inspectors are adequately prepared to utilize the enhanced information and analytic capabilities to be provided by new systems such as SPAS and the On-line Aviation Safety Inspection System (OASIS).
- 2.H** Expedite funding (F&E appropriation) and deployment of OASIS.

ISSUE 3: NEWLY CERTIFICATED AIR CARRIER OPERATIONS AND GROWTH

The system in place to determine the capabilities of a potential air carrier prior to certification is more defined than inspection activities performed after certification. For those carriers operating for more than 5 years, FAA's system of monitoring compliance is relatively stable, as their operating practices are usually consistent, predictable, and well known to inspectors. However, conducting surveillance on a newly certificated air carrier is often more difficult because of the numerous changes that typically occur during the first several years of operation. This difficulty is compounded when these changes occur in conjunction with rapid growth.

¹ National Aeronautics and Space Administration's Aviation Safety Reporting System, which contains data on aviation safety incident reports.

Recommendation 3

Ensure that newly certificated air carriers have adequate resources and infrastructure to support stable and safe operations and growth.

- 3.A Heighten the level of surveillance of newly certificated air carriers for at least the first 5 years of the company's operation.**
- 3.B Initiate periodic, coordinated OST and FAA reviews of newly certificated air carriers that assess management, financial, and operational capabilities.**
- 3.C Manage safe growth of newly certificated air carriers through FAA's use of operations specifications that specify approved number of aircraft, aircraft types, and scope of operations and, where appropriate, through OST's increased use of conditional approvals.**

ISSUE 4: OUTSOURCING AND VARIED FLEET MIX

Many air carriers, especially those that are newly certificated, are making greater use of outsourcing as a means to trim costs and remain competitive. Another common practice is the use of a varied aircraft fleet mix. Air carriers using a variety of aircraft types, or a mix of models of the same type, have a far more complex operation than those using a single fleet make and model. Following certification, these practices add to the complexity of tasks for air carrier management of the operations, training, and maintenance of the carrier and its contractors. The initial dual certification process used by OST and FAA does not adequately consider the managerial and oversight capabilities required by new applicants who intend to engage in substantial outsourcing of maintenance and training or who operate a varied fleet mix. Increased use of outsourcing and mixed fleets heightens the need for ongoing FAA surveillance to ensure that carriers have the necessary resources, infrastructure, and management capabilities required to maintain a consistently high level of safety. In addition to the initiatives announced by Administrator Hinson on June 18, 1996, to improve FAA oversight of carriers who outsource, we recommend the following:

Recommendation 4

Ensure that all air carriers have adequate resources and infrastructure to support outsourcing and operation of a varied fleet mix. Require specific information related to outsourcing and fleet mix in the OST and FAA applications. Increase OST and FAA scrutiny of these factors in determining an air carrier's initial and continuing qualifications to operate.

- 4.A Require more information in the OST application on outsourcing and operation of a varied fleet mix including:**
 - the percentage and type of in-house vs. contract maintenance and training;**
 - what corporate position will oversee contract maintenance and training, to whom that person will report in the corporate structure, how the oversight will be accomplished, and whether the position is full-time or part-time; identity of the**

individual designated to serve in the position and his or her credentials to oversee contracts of this type; and

- the adequacy of the applicant’s maintenance and training budgets if the applicant proposes to operate a mixed fleet of aircraft.

4.B Require that specific items on outsourcing be included in the air carrier’s manual and incorporated by reference in the operations specifications issued to the carrier:

- the percentage and type of in-house vs. contract maintenance and training;
- the identity of the corporate position that will oversee contract maintenance and training, to whom in the corporate structure that person will report, how the oversight will be accomplished, and whether the position is full-time or part-time;
- how the corporate structure will integrate into its safety programs the diverse services provided by its various outsourced maintenance and training contractors.

4.C Encourage the air carrier industry to develop a model contract for outsourcing. Encourage inspectors to routinely evaluate outsourcing contracts as required by existing guidance and to use the model contract as an additional evaluation tool.

The model contract should address issues of concern such as:

- oversight and audit systems and programs that conform to regulations;
- access by the FAA to a contractor’s facility (although the FAA already has the right to inspect these facilities, the contract clause will decrease the need to gain the access by issuing subpoenas or by pursuing litigation);
- adequacy of staffing levels and sufficiency of the facilities and equipment to support a varied fleet mix; and
- adequacy of record keeping and exchange of information with the contractor.

4.D Develop guidance and training to give inspectors a broader perspective on air carrier operations and to help them recognize and identify systemic deficiencies.

4.E Establish policy and guidance requiring a new air carrier to adhere to the manufacturer’s maintenance program, time intervals, and maintenance processes.

4.F Develop policy that provides for air carriers to maintain a current Statement of Compliance.

4.G Develop common policies and procedures applicable to “parent” and “satellite” repair station certification and surveillance.

ISSUE 5: INSPECTOR AND AIR CARRIER GUIDANCE MATERIAL

Guidance to aviation safety inspectors and to air carriers is provided in the form of various, divergent documents. These materials provide guidance to inspectors on how to perform the various functions

including certification, surveillance, enforcement, and accident investigation. The foundation for these documents are the Federal Aviation Regulations (FARs). The materials are also available to air carriers and other certificate holders to assist them in complying with the requirements of the FARs and assuring safe operations. Many of these guidance materials are poorly disseminated, difficult to find or access, and sometimes contain dated or contradictory information.

Recommendation 5

Ensure consistency, timeliness, usefulness, and accessibility of guidance material provided to inspectors and air carriers.

- 5.A Streamline and consolidate current guidance to eliminate duplications and create a more concise and consistent publication system for inspectors and air carriers.**
- 5.B Improve accessibility of guidance materials through the use of automation by expediting the implementation of the Handbook Modernization Project.**
- 5.C Implement a policy to provide adequate training to inspectors on new guidance materials.**

ISSUE 6: INSPECTOR RESOURCES

The inspector work force is central to the success of FAA’s mission of ensuring regulatory compliance and maintaining a high level of aviation safety. Historically, inspector levels have been understaffed as a result of underestimation made in staffing standards and fiscal constraints. Recently, the FAA has made gains in increasing staff, but is still short of current needs. The FAA has implemented and continues to implement numerous improvements to more effectively use existing resources. Some of these improvements, including better training and better management of risks by targeting inspections, are recommended in this report. However, while more efficient processes are being developed and their impact measured, FAA must meet 100 percent of its resource needs based on current ways of doing business. Otherwise, FAA risks falling behind in its oversight responsibilities. In the long run, as productivity gains are realized based on improved business processes, staffing levels can be adjusted.

Recommendation 6

Ensure that Flight Standards resources and training are adequate to meet safety requirements.

- 6.A Devise a new Flight Standards staffing model which embraces the flexibility of FAA personnel reform and the National Performance Review. The new model should respond more timely to changes in workload and productivity and should express field office needs as a holistic requirement. As an interim measure, issue policy and guidelines on the authority of regions to adjust field office staffing based on “spikes” which occur due to operator growth and other unanticipated workload changes.**
- 6.B Pursue financial reform to provide a process that will permit Flight Standards funding to keep up with rising personnel costs. In the interim, while a new staffing model is under development, use the staffing analysis accomplished for this report to meet current requirements and for the purpose of budget formulation. Estimates are an additional 146**

inspectors and 74 support staff over current plans for FY 1997, and 135 inspectors and 53 support personnel over current budget plans for FY 1998.

- 6.C Begin an immediate initiative under FAA Personnel Reform, in concert with the overall Compensation Plan for the FAA, to design a new Flight Standards pay system. The new pay system should develop technical, professional, and managerial career tracks in accordance with Challenge 2000. As an interim measure, implement the FAA Position Classification Guide, Aviation Safety Inspector Positions (Air Carrier and General Aviation), and GS-1825 Series.**

- 6.D Create a Challenge 2000 Training Center of Excellence (COE) and place budget execution and program authority for Flight Standards technical training within the Regulation and Certification Line of Business.**

INTRODUCTION

Recent events have caused the Federal Aviation Administration (FAA) to take a hard look at the way it does business, especially with respect to safety inspections. As a result, the FAA Administrator on June 18, 1996, announced that the FAA Deputy Administrator would conduct a 90-day review of specific concerns and provide recommendations that could be implemented immediately.

The review examined Federal regulations and FAA's management of oversight of commercial airlines engaged in substantial outsourcing of maintenance and training functions, as well as the flexibility with which FAA inspection resources can be deployed effectively in response to varied fleet mixes, rapid growth, or other changes by a certificate holder. (See Appendix E for work statement).

A task force was formed on July 1, 1996, to conduct the 90-day safety review. Based on issues outlined in the scope of work, the task force was divided into two work groups. The first work group examined regulations related to outsourcing, new air carrier growth, initial and continuing certification requirements, and guidance materials. The second work group looked at resource allocation issues relating to certificate management, staffing requirements, workload distribution, and information/risk management. These work groups, comprised of FAA and the Office of the Secretary of Transportation (OST) subject matter experts and FAA union representatives, were selected based on their knowledge and experience in the areas of flight standards regulations, certification, and inspection activities. An Executive Steering Committee made up of senior government officials, a union president, and non-government aviation safety experts was selected to guide the review. (See Appendix A for a list of task force and executive steering committee members.)

To gain insight and gather information pertaining to the issues, a list of questions was drafted and distributed to select Flight Standards Service (AFS) employees, government organizations, and industry representatives for feedback. (See Appendix E for work statement questions). During July and August, additional feedback was obtained during outreach interviews conducted with industry representatives, AFS managers and employees, the National Transportation Safety Board (NTSB), General Accounting Office (GAO), and the Department of Transportation (DOT), Office of the Inspector General (OIG). (See Appendix B for a list of individuals and organizations who participated in the interviews or provided written feedback.) Information was also collected and reviewed from a number of reports, studies, articles, and official documents.

A key objective of the review was to develop near-term recommendations consistent with the Challenge 2000 report and other longer-term initiatives of the agency.

THE CHALLENGE

The challenges facing the FAA result from the interaction of several key trends in the aviation industry and the federal government during the last decade. These challenges exist today and will increase in the future.

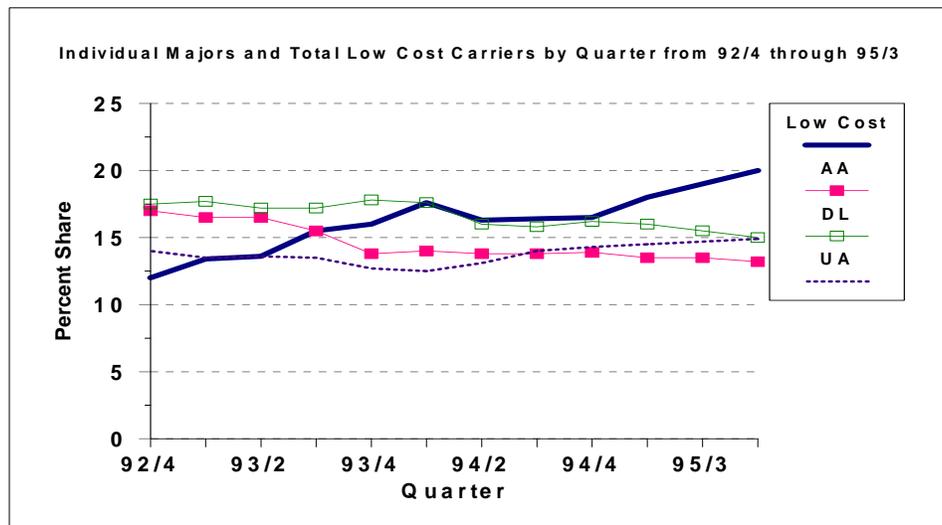
Increased Aviation Industry Growth and Complexity

Air travel in the United States has risen dramatically since the industry was deregulated in 1978. Between 1980 and 1994, the number of passengers boarding U.S. commercial air carriers jumped 78 percent, from

297 million to 528.7 million. Today there are approximately 30,000 air carrier and commuter departures scheduled daily, carrying over a million passengers.

During this period of rapid expansion, the aviation industry underwent numerous transformations. Some well-established airlines failed while others expanded, and a number of new air carriers entered service. In recent years, most growth has occurred among low-cost and new air carriers. As a group, these airlines carry more domestic passengers than the largest domestic airline, and they are continuing to grow rapidly.² From January 1990 to July 1995, 180 applicants applied to begin new airline operations, with half receiving final authorization to do so. In the year ending September 30, 1995, passenger travel in markets with low-cost service accounted for 38.6 percent of total domestic traffic. Figure 1 represents the percent of market shares for total low cost carriers compared to three major airlines during a three year period.

Figure 1: Passenger Market Shares



Source: U.S. Department of Transportation report “The Low Cost Airline Service Revolution”, April 1996

Often lacking the resources and infrastructure of the major airlines, many new air carriers have turned to new ways of doing business, hence, changing the traditional view of how an airline operates. By leveraging outside expertise through a system of extensive contracting, or “outsourcing,” these smaller carriers have been able to lower operating, maintenance, and training costs. In a further effort to trim costs during expansion, some new air carriers may lease aircraft or purchase older aircraft from a variety of sources. The result may be a mixed fleet of aircraft, making the operation and maintenance more complex and requiring a high degree of quality assurance.

The trend toward outsourcing, while most prevalent among small and new air carriers, is also employed by the larger carriers as they seek to gain similar efficiencies. The contractors used by the carriers vary in size, resources and experience levels. Much of the major, complex outsourced work is performed by large operators that have been certificated by the FAA. However, as the aviation industry continues to specialize, the use of smaller, widely dispersed firms is becoming more commonplace. The practice of outsourcing has also become more international as airlines seek to take advantage of lower costs and gain

² “The Low Cost Airline Revolution,” Department of Transportation, Office of Aviation and International Economics, April 1996.

market access to geographic areas offering potential growth, especially in the emerging economies of Asia.

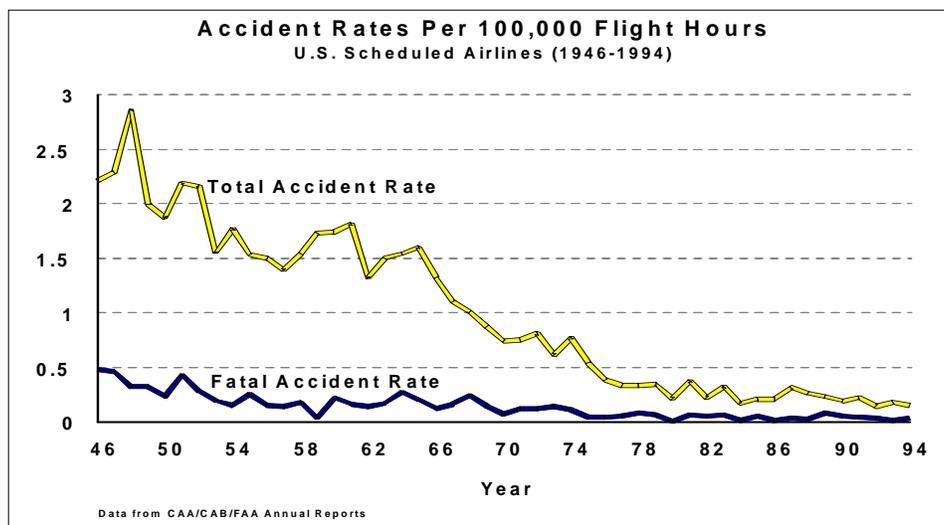
Another change influencing the industry is the widespread use and rapid implementation of advanced technologies. Driven by economic, quality, and safety concerns, airlines have turned to sophisticated technologies such as datalink communications, advanced flight management systems, and satellite navigation. Training, maintenance, and other essential activities have become increasingly reliant on advanced systems and procedures that depend on a highly skilled and adaptable work force.

Taken together, these trends add significantly to the complexity of the aviation industry. What was once a centralized, stable, and relatively static air transportation environment, is today more fluid, expansive, and technology-intensive. The systems and skills needed to operate, maintain, and oversee the industry have changed dramatically. Against this backdrop the FAA, as regulator of this dynamic industry, is itself facing greater scrutiny. The primary question asked inside and outside the agency is: What changes must be made to ensure that the FAA has the necessary resources and flexibility to maintain and improve the current record of a safe and reliable aviation industry?

Keeping the Skies Safe

Since its inception, the FAA has overseen the safest, most widely used aviation system in the world. Administrator Hinson and the Secretary of Transportation, Federico Peña, emphasize that the United States has maintained this record due in large measure to an FAA staff of capable and hardworking individuals. Technological advances and a highly successful partnership between government and industry further contribute to this impressive safety record. Even during periods of dramatic growth, such as that experienced in the aftermath of deregulation, air travel has become progressively safer. In the 16 years prior to deregulation, there was an average of one fatal accident for every 814,000 flights. By 1994—16 years after deregulation—that figure dropped to one for every 2 million flights. Figure 2 illustrates the safety record over time.

Figure 2: Safety Record



As commendable as the safety record is, business as usual will not be sufficient for the future. The FAA is forecasting an increase in scheduled passenger traffic of more than 800 million passengers within the

next 10 years.³ Industry analysts predict that revenue passenger miles will increase from 1,576.89 billion in 1995 to 4,272.78 billion by 2015. A market forecast by the Boeing Commercial Airplane Group points out that by the year 2015, unless today's very low accident rate improved even further, the number of fatal accidents worldwide will increase to one every eight to ten days⁴. To continue to build on today's safety record, FAA and the aviation industry must continue their efforts to improve safety by identifying and resolving areas of potential risk. Moreover, the FAA will need to become more predictive, basing safety trends more on operational data and less on accident investigation. The FAA's objective is simple: zero accidents. To achieve this goal, the Government and the aviation community must act cooperatively and be prepared to invest the necessary resources.

Shrinking Government Resources

While recent and future trends in the U.S. aviation industry may be characterized by increased growth, the opposite is true for federal agency budgets—including that of the FAA. The federal deficit has dictated that the 1990s become a decade of federal agencies “doing more with less.” The FAA's budget has dropped significantly since 1992 and is expected to decline. A significant portion of this decrease has occurred in the Facilities and Equipment (F&E) and Research, Engineering, and Development (R,E&D) appropriations that fund the development of new technology and infrastructure required to keep pace with the future. (Since 1992 the F&E budget decreased from \$2.4 billion to \$1.9 billion, while R,E&D went from \$218 million to \$186 million.) Cuts in these essential investments, combined with flat or decreasing operations appropriations, exacerbate the challenge of keeping pace with an industry that is growing rapidly in size, technological sophistication, and organizational complexity.

Congress has provided funds for more safety inspectors at the FAA, but the resources needed to train and equip these inspectors have not been adequate. These constraints increase the FAA's difficulty in competing to recruit and retain the most capable safety inspectors. In Congressional testimony and official reports, the GAO has historically supported and continues to support the need for more funding of FAA inspection programs, training, and inspector personnel.⁵

³ FAA Aviation Forecasts, Fiscal Years 1995-2006; Report FAA-APO-95-1, March 1995.

⁴ *Accident Prevention Strategy*, Boeing Commercial Airplane Group, 1993.

⁵ GAO/T-RECD-96-26, *Targeting and Training of FAA's Inspector Workforce*, April 30, 1996.

HOLDING THE LINE

At the front line of the FAA's effort to improve safety is a work force of committed, capable, and hard-working individuals. This work force is exemplified by the approximately 2,500 aviation safety inspectors who are responsible for ensuring that airlines and other aviation-related activities are in compliance with the Federal Aviation Regulations (FAR). These inspectors have an enormous scope of responsibility that includes the oversight of:

- **7,300 scheduled commercial aircraft;**
- **11,100 charter aircraft;**
- **Over 184,000 active general aviation aircraft;**
- **4,900 repair stations;**
- **Over 600 schools for training pilots;**
- **200 maintenance schools; and**
- **Over 665,000 active pilots.**

In addition to these inspectors, the FAA relies on approximately 12,400 designated representatives, or "designees" (4,000 for aircraft certification, 6,000 for aviation medicine, and 2,400 for flight standards) to assist in providing oversight of the aviation community. These designees come from private industry and are legally authorized to conduct specific FAA services, performing duties such as pilot and medical examinations, among other things.

In addition to its internal and designee work force, the FAA is assisted in its oversight mission by other government bodies and private organizations that have contributed enormously to the knowledge base of the agency. Essential aviation safety data and significant research findings are derived from accident investigations and research studies performed by the NTSB. Since 1967, over 3,300 NTSB recommendations have been issued to the FAA. Between July 1, 1993, and July 1, 1996, the Board issued 409 safety recommendations to FAA. Of those, the Board closed 90 percent as "closed acceptable," the highest acceptance rate ever.

Governmental audits by the GAO, the DOT's OIG and Congress have also provided recommendations that have significantly and positively affected the agency. Private organizations—including airlines, industry and labor associations, universities, and manufacturers—have also been instrumental in providing technical information and analyses that have helped the FAA better utilize existing resources and plan for the future.

While the assistance of designees, technical data, and recommendations from other agencies and organizations have enabled the FAA to leverage its own resources to achieve an enviable safety record, the future dictates fundamental changes in the FAA's regulatory operations. The growing aviation industry and shrinking federal budgets demand changes that result in better targeting of FAA resources and a more strategic approach to safety oversight.

Quite apart from the FAA's safety-related responsibilities, OST also performs an examination of each airline applicant's managerial and financial preparedness and honesty. OST employs a staff of six professional analysts with backgrounds in economics, accounting, and statistics to perform this job. Of necessity, this limited staff's activities are largely focused on analyzing new applications. If a serious

question arises regarding the continuing fitness of an individual airline, the same staff will also perform an analysis of that carrier's continued managerial and financial fitness. To some extent their deliberations take into account information supplied by the FAA regarding the latter's working experience with the carrier. By and large, however, the OST fitness process is independent of the FAA's review. Nevertheless, OST's review considers safety in the context of an airline's management and its predisposition to comply with all laws and regulations. In this report we will include a description of the OST process and offer some recommendations on enhancing the utility of both the FAA and OST processes to each other through heightened coordination.

MEETING THE CHALLENGES

Projections of unprecedented growth in air travel, rapidly evolving technologies, increased globalization, and innovative industry practices have prompted the FAA to plan for future changes. Faced with a declining budget, the FAA has addressed ways to become more strategic with its resources. Examples include personnel and acquisition reform that build on the foundation established by the National Performance Review; and the one level of safety rule (see 14 CFR Part 119 in Appendix C, page C-3). This will reorient past approaches to be more responsive and flexible to the changing environment. Central to this effort will be major improvements in using safety data to identify and target areas of high risk.

In July 1995, the FAA Administrator commissioned the Challenge 2000 and Research, Engineering, and Development Advisory Committee studies to address these challenges and to provide recommendations for positioning the agency's Regulation and Certification Organization (AVR) for the 21st century.

An FAA management team is currently working on a plan for making the major changes needed to respond to the Challenge 2000 recommendations. The actions identified from this long-term view include major reengineering of the certification and surveillance processes which will be woven into ongoing initiatives aimed at improving inspection and surveillance activities. It is intended that recommendations contained in this report be consistent with the Challenge 2000 recommendations.

STRUCTURE OF REPORT

The report is organized into six issue areas. These areas reflect the general categories developed in the scope of work. Each issue is subdivided into the following sections:

- The **Background** section provides historical information, describes the issues in detail, and develops the rationale for the recommendations.
- The **Issue Summary** section defines the key issues presented in the background.
- The **Recommendations** section describes the principal recommendations corresponding to the issue area discussed. The principal recommendations contain additional, more specific sub-recommendations.
- The **Proposed Implementation Strategy** section suggests actions that can be taken to implement the principal recommendations and sub-recommendations. The implementation strategies address short-, medium-, and long-term initiatives.

The final section of the report provides concluding remarks.

ISSUE 1: CERTIFICATION POLICY AND PROCESS

BACKGROUND

Under Title 49 of the United States Code (Transportation), any U.S. citizen proposing to provide air transportation operations as an air carrier must first obtain two separate authorizations from the DOT⁶: “economic” authority in the form of a Certificate of Public Convenience and Necessity from the OST and “safety” authority in the form of an air carrier certificate from the FAA. An OST certificate may be issued only if the applicant is found to be “fit, willing, and able” to conduct its proposed operations. An FAA certificate may be granted only if the applicant is found to be properly and adequately equipped and able to conduct a safe operation. (See Appendix C for specific references to Federal codes and regulations noted in this section.)

In deregulating the airline industry in 1978, Congress addressed both the primary consideration of maintaining a high level of safety and the economic benefits of heightened competition.⁷ The Declaration of Policy for the Airline Deregulation Act of 1978 lists both the “assignment and maintenance of safety as the highest priority in air commerce” and the importance of the “encouragement of entry into air transportation markets by new air carriers.”

As a practice, both FAA and OST provide intensive support to all new applicants in the development of their application materials, guiding them through the process step-by-step, including those who never complete the certification process or never actually commence operations.

The OST Application Process

OST uses a three-part test to determine the fitness of an applicant for air carrier authority:

- OST examines the *managerial competence* of the applicant’s key personnel⁸ to determine whether they have relevant business and aviation experience to operate an airline and to determine whether the management team, as a whole, possesses the background and experience necessary for the kind of operations being undertaken;
- OST reviews the applicant’s *operating and financial plans* to determine whether the applicant has a reasonable understanding of the costs involved in starting its operations and whether it has access to or a real and plausible plan for raising sufficient funds to pay its start-up expenses and to maintain a working capital reserve equal to 3 months of proposed normal operating costs; and
- OST reviews the applicant’s past *compliance record* to determine whether it has or its key personnel have a history of safety violations or consumer fraud

⁶ There are exemptions to this rule. Air carriers proposing to operate small aircraft (aircraft designed to hold 60 or fewer seats or with a payload capacity of less than 18,000 pounds) are exempt from the certificate requirement and may obtain authority as an air taxi operator or commuter air carrier (14 CFR 298). In addition, OST may grant exemptions from the certificate requirement where it finds that such exemptions are “consistent with public interest.”

⁷ “American consumers have saved an estimated \$6.3 billion in airline fares because of the competition brought about by low cost, low fare airlines...” Statement of Secretary Peña from an April 1996 Department of Transportation report titled, “The Low Cost Airline Service Revolution.”

⁸ “Key personnel” generally refers to the president, chief executive officer, chief operating officer, vice presidents, general manager, chief financial officer, directors of operations and maintenance, and chief pilot.

activities that would pose a risk to the traveling public, or whether other factors indicate that the applicant would not be likely to comply with Government laws, rules, and directives.⁹

After an application for air carrier authority is received by OST, it is reviewed to ensure that all information required by the Aviation Economic Regulations (see 14 CFR §204.3 in Appendix C, page C-5) has been submitted. If an application is incomplete, OST asks the applicant to provide any missing or clarifying information. Any weaknesses in the applicant's operating proposal, management team, or plan for raising the necessary financial resources or any issues involving its compliance disposition will be brought to the applicant's attention so that the applicant can respond and make appropriate changes. If the applicant is unable to resolve these problems or if its fitness to operate otherwise remains in doubt, OST can issue an order to dismiss or deny the application or set the case for oral hearing before an administrative law judge to resolve any material issues of fact.

Once OST determines that an application is complete and the applicant appears to meet the fitness criteria, OST issues an "Order to Show Cause" that summarizes the key elements of the application and that tentatively finds the applicant fit. The order also invites interested persons to "show cause" why OST should not issue a final determination to that effect. If no objections are received, OST issues a "final" order finding the applicant fit and awarding it the requested authority. If there are objections, OST reviews the information submitted before making a final decision.

In some instances, OST may impose conditions on the applicant's authority—such as a one-year temporary certificate—to monitor its operations and/or compliance record; or if a company's financial resources are extremely limited, it may impose restrictions on the number or size of aircraft that can be operated or the type of service that can be provided.

If the applicant has not already received the required operating authority from the FAA at the time of its fitness determination, OST imposes a condition that the OST certificate will not become effective until it has received from the FAA a copy of the applicant's air carrier certificate and operations specifications. OST also requires the company to provide, along with the FAA documentation, updated financial statements, and verification that required funds have, in fact, been received, as well as a statement of any changes that have occurred in the company's key personnel, compliance history, operating proposal, or financial picture since its application was reviewed by OST. If these documents are satisfactory, OST reissues the company's certificate with an "effective" date. At this point, the company is authorized to commence flight operations.

The FAA Application Process

The FAA certification process is divided into five phases with three "gates." The gates are defined as particular points in the process at which requirements must be met before proceeding to the next part of the process. The gate concept controls the amount of resources that will be applied to certification activities.

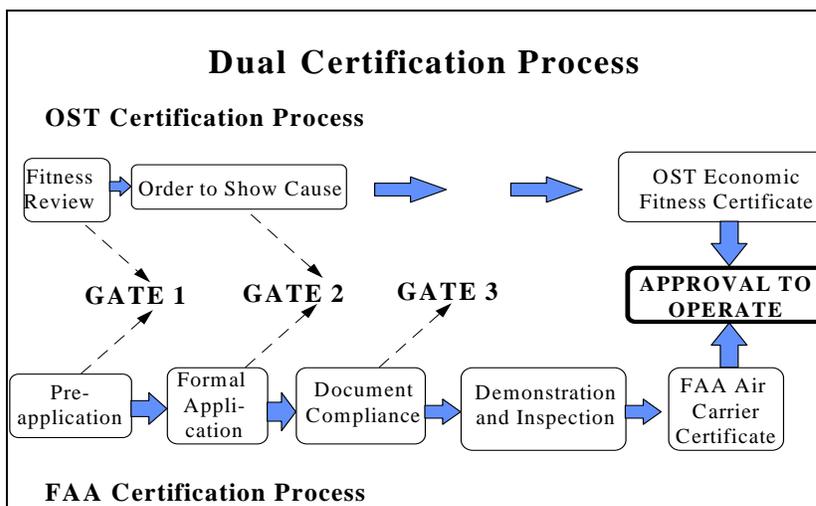
- In the ***Preapplication Phase (Gate 1)***, the FAA gives the applicant basic information about the agency's certification process and assigns a team of inspectors to meet with the applicant and discuss the proposed operation. Before proceeding to the next phase, the applicant must have submitted a completed

⁹ As part of this review, OST checks with the FAA and NTSB to verify information provided by the applicant on past safety records. OST verifies with the FAA whether the applicant holds or has applied for the necessary safety certificate, the status of any such application, and whether the FAA knows of any reason why the applicant should not be found fit.

Preapplication Statement of Intent (PASI); have already applied to OST for economic authority; have completed its facility selection for training and maintenance; have letters of intent for lease or purchase of aircraft and facilities; have submitted a proposed schedule of events; and have key management resumes and personnel available;

- In the **Formal Application Phase (Gate 2)**, the applicant must have submitted all required documents, including a formal letter of application, operation and maintenance manuals, training curricula, and personnel resumes documenting its key personnel’s managerial and technical skills. The applicant must also have either leased or purchased aircraft and facilities by this time and been tentatively found fit to operate by OST as evidenced by the issuance of an “Order to Show Cause;”
- In the **Document Compliance Phase (Gate 3)**, FAA inspectors review the documents submitted in the preceding phase to determine whether they comply with applicable safety regulations and operating practices. In this phase the applicant’s training programs are given initial approval, and maintenance programs are approved or accepted as required. Facilities are evaluated, emergency evacuation demonstrations are conducted, and all other discrepancies and open questions are resolved;
- In the **Demonstration and Inspection Phase**, inspectors evaluate the applicant's regulatory compliance and safety operating practices by conducting on-site inspections of the applicant’s aircraft and maintenance facilities; observing training programs; reviewing maintenance, operations, and record keeping procedures; and reviewing actual in-flight operations; and
- Finally, in the **Certification Phase**, FAA issues an air carrier certificate and approves the applicant’s operations specifications, copies of which must be supplied to OST to make the applicant’s economic authority effective.

Figure 3: FAA/OST Coordination Process



FAA and OST Coordination

Some FAA inspectors and managers, representatives from the GAO, and others interviewed for this review, believed that OST and FAA should work together more closely on certification issues. While there is some coordination between OST and FAA, there is no routine exchange of applications. In some instances, information provided to OST is different from the information provided to FAA on key management personnel or operating plans. Moreover, problems uncovered by one organization are not always noted by or shared with the other. There was general support for the idea of having the FAA and OST processes run sequentially. One industry group noted that there was no point in the FAA committing its resources to certify a new operator until the applicant has received initial approval from OST.

Inadequate or Incomplete Applications

While specific information requirements are contained in Parts 119 and 121 of the FAR pertaining to the FAA authority and in Part 204 of the Aviation Economic Regulations pertaining to the OST authority (see references to 14 CFR Parts 119, 121, and 204 in Appendix C, pages C-1 to C-4), it is not uncommon for applicants to file applications with inadequate or incomplete information. When such applications are received, an excessive amount of time is expended informing applicants of deficiencies. In many cases, applicants are unable to resolve those problems without specific guidance and assistance from OST or FAA staff. By the time initial issues are resolved, changes may have occurred: key personnel leave and have to be replaced, resulting in a need to review the backgrounds and qualifications of their replacements; financial statements become outdated or operating plans and even aircraft types are revised due to changing market conditions, resulting in new or different capital requirements; or manual and training program changes must be re-analyzed and evaluated.

OST and FAA expend substantial resources on applicants who never complete the certification process or never actually commence operations.¹⁰ Of the 98 applications filed with OST to operate large jet aircraft (over 60 seats) between January 1, 1989, and July 1, 1996, 32 percent were either dismissed or denied, including 44 percent of the applications during the first 6 months of 1996 and 46 percent of those processed in 1995. Of the 67 applications that were approved by OST, 11 of the companies involved (18 percent) never received FAA operating authority and never commenced operations; five more have applications pending before the FAA.

The acceptance, review, and processing of incomplete or poorly prepared applications places a substantial drain on staff resources and diverts the staff from processing the applications of persons who are well prepared. It also takes time away from conducting continuing fitness reviews, surveillance activities, and other safety-related duties. While providing some assistance to applicants is an appropriate staff function, a balance needs to be struck between being helpful and doing the applicant's work. Federal oversight agencies, industry trade groups, Flight Standards managers, and inspectors interviewed for this review believed that FAA needs to limit the amount of assistance provided to applicants and that the certification process needs to be more rigorous to remove quickly unqualified applicants before significant OST and FAA resources are expended.

In an effort to reduce resources spent, the FAA instituted the gate concept. Applicants must now provide signed contracts or letters of agreement stating they have purchased or leased the aircraft, facilities, and

¹⁰ OST estimates that it takes approximately 100 staff hours to review a new certificate application, while it is estimated that FAA spends an average of 1,835 hours to complete its portion of the certification process. According to a recent GAO report (*Certification of New Airlines: The Department of Transportation Has Taken Action to Improve Its Certification Process*, GAO/RCED-96-8, January 1996), FAA officials estimated the staff time spent on applicants that did not complete its certification process to be about 800 hours per applicant.

services needed to conduct the proposed operations, and that they have been tentatively found fit by OST prior to FAA expending time reviewing the hundreds of pages of operating, maintenance, or training manuals.

While the benefits of using the gate concept are apparent, its effect is often weakened by inconsistent application by the FAA Flight Standards District Offices (FSDOs). According to some FAA managers, this lack of standardization in applying the gate concept encourages applicants to “shop” among FSDOs in search of an organization that provides the most favorable conditions for processing their application (e.g., commitment of FAA resources to assist in completion of the application package).

Application Fees

Applicants currently pay application filing fees to OST, but nothing to FAA. According to a recent GAO report, the average cost OST charges is a fee of \$800 for each application. That fee does not include the estimated \$4,000 in costs that OST incurs in processing the fitness applications. In a time of scarce resources for the FAA, the costs of initial certification are not insignificant. FAA estimates that it costs the agency about \$5 million a year to provide this service to the industry. It is believed that employing certification fees will provide an incentive for new applicants to submit complete applications while allowing for FAA certification cost recovery.

The GAO recommends that the FAA charge for this initial certification and that OST raise its current fees. GAO found that considerable inspector time is expended although not all applicants complete the certification process. In one instance, FAA suspended certification activities after expending \$64,000 because the applicant was unable to purchase or lease aircraft. Application fees will help better utilize FAA resources.

There is also ample precedent for charging a fee for new business arrangements or products. For instance, the Department of Justice and the Federal Trade Commission assess premerger filing fees for reviewing proposed mergers; the Nuclear Regulatory Commission levies licensing and inspection fees; and the Federal Energy Regulatory Commission charges specific fees for the construction of facilities. In addition, the EPA charges a one-time registration fee for reviewing the active ingredients in pesticides, and the Food and Drug Administration charges manufacturers a one-time fee for each new drug application. FDA has used these funds to hire more staff and to cut review times dramatically without compromising safety.

The Airline Deregulation Act of 1978 stresses the importance of the “encouragement of entry” into the air transportation markets by new air carriers. Therefore, in setting the amount of any fees, consideration should be given to whether such fees serve as a significant barrier to entry into the air transportation market. With greater use of the gate concept for applicants, the potential impacts may be mitigated by setting fees at gates rather than paying the entire fee up front.

FAA Workload

The certification process is labor intensive and represents a significant workload for FSDO inspectors. When a FSDO is understaffed, the situation is worsened by the possibility that the FSDO may lack the expertise required to perform a standardized, high-quality certification. In some cases, a FSDO may have no choice but to use inspectors with little experience. Although national and regional specialists are available to assist FSDO inspectors, this assistance is not always available because these specialists have a variety of assignments which compete for their time.

ISSUE SUMMARY

- *There are differences in the application process within the FAA and between OST and FAA. There is little coordination and minimal exchange of applicant information between OST and FAA. In some instances, information provided to OST is different from the information provided to FAA on key management personnel or operating plans. Moreover, problems uncovered by one organization are not always noted by or shared with the other. FAA's application process ("gate concept") is not universally followed by all FSDOs that review new certificate applications. The interpretation of regulations and the stringency of applicant documentation requirements differ among regions and FSDOs, resulting in the practice of "FSDO shopping" by applicants in search of the most favorable situation.*
- *Applicants frequently file applications with inadequate or incomplete information that result in: 1) a lengthy application process during which the status of the applicant's data frequently changes; 2) OST and FAA devoting excessive staff resources and costs to informing applicants of the deficiencies in their filings and providing specific guidance on and assistance in the changes required to ensure favorable action on the application; and 3) the expenditure of substantial OST and FAA resources on applicants who never complete the certification process or never actually commence operations.*
- *The fees currently paid by applicants cover only a small portion of the costs associated with the application process. Applicants currently pay application filing fees to OST, but nothing to FAA to certify their proposed new operations. The nominal fees paid by applicants provide no incentive for the submission of complete, well-prepared applications that could be processed efficiently.*

RECOMMENDATIONS

Rigorously enforce OST and FAA application procedures.

- 1.A Stringently enforce existing requirements on new air carrier applicants by requiring the filing of a complete application with OST.**
- 1.B Create an FAA national certification team to assist local Flight Standards District Offices in processing new air carrier certifications similar to the proposed Challenge 2000 Centers of Excellence. Use this national team to add FAA expertise to the OST certification process by acting as a certification liaison between FAA and OST.**
- 1.C Require FAA to routinely follow the "Gate Concept" in processing FAA certificate applications.**
- 1.D Require the applicant to file a copy of portions of the OST application material with the Flight Standards District Office with which it intends to file its application and file a copy of the FAA Preapplication Statement of Intent (PASI) with OST, along with any other documents that describe the type and number of aircraft to be operated.**
- 1.E Limit the amount of assistance OST and FAA provide to unprepared or unqualified applicants.**

1.F Support the imposition of FAA application fees and the increase of OST fees for initial certification of new applicants.

PROPOSED IMPLEMENTATION STRATEGY

Strengthen OST Application Policy

OST should stringently enforce existing requirements on new air carrier applicants by requiring the filing of a complete application.¹¹ After review of an application, OST should advise the applicant of any deficiencies in its filing and give it 30 days to make corrections or the application would be dismissed or rejected.

OST could adopt and follow a “gate concept” similar to the FAA requirements, under which it would prepare a show-cause order only if the applicant had filed its PASI with the FAA and had entered into letters of intent for the lease or purchase of aircraft and facilities. If the applicant had not filed these documents within 6 months of submission of its OST application, that application would be dismissed. Requiring applicants to submit complete applications is a policy decision, not a regulatory decision, since no information is being sought that is not currently required by OST regulations (see 14 CFR Part 204 in Appendix C, page C-4). OST could disseminate this policy through: 1) its information packet for new applicants, 2) letters to applicants requesting additional information, and 3) fitness orders proposing to dismiss or reject applications for failure to comply with this standard.

Implementation of this policy should not adversely affect any new applicant that is fully prepared to process its application to completion. In fact, just the opposite should be true: it would free up OST staff resources from expending substantial time on incomplete, poorly prepared filings so that they could be concentrated on the ready and well-prepared applicant.

Create a National Certification Team

FAA inspectors and managers alike felt that the certification process could be immediately improved by use of a specially trained, national certification team. They recommended a national resource that would be comprised of highly trained and well experienced inspectors. The members of the team would possess in-depth knowledge of certification procedures and requirements as well as expertise in specific aircraft and airline procedures and policies. The national certification team is *not* intended to have oversight of field offices.

In keeping with those recommendations, the national certification team would:

1. provide training to FSDOs in certification of air carriers, including outlining of a carrier specific certification process;
2. provide FSDOs with staff and technical guidance in the certification of new air carriers;
3. assist FSDOs in coordinating their efforts with OST;
4. guide FSDOs in developing a comprehensive surveillance management plan for continued surveillance of the carrier after certification;

¹¹ “Complete” means that all key management team positions are filled with qualified individuals and firm financing plans are in place that meet the OST financial criteria.

5. provide FSDOs with staff and technical guidance immediately after certification when carrier oversight is most required; and
6. assist the FSDOs in a mandatory post-certification fitness review within the first year of operation.

In creating the national certification team, the team members chosen for each new certification project would assist the assigned principal inspectors, thus ensuring standardization, consistent application of guidance, and the efficient use of staff resources. Through training, the national certification team would ensure that certification processes adhere to the gate concept as well as follow all FAA internal guidance.

Any resulting certificate would be issued and managed by the local FSDO. Because of the team's experience in processing new air carrier applications, it would be better positioned to assist Certificate Holding District Offices (CHDOs) in processing well-prepared applications with the least amount of delays and to determine at what point a poorly-prepared application should be dismissed or rejected.

In addition to the team's role in the certification of applicants, it would also:

1. assist in the development of air carrier inspector handbooks;
2. provide consistent interpretation of agency guidance regarding air carriers to field inspectors;
3. conduct National Aviation Safety Inspection Program (NASIP) inspections;
4. serve as subject matter experts;
5. serve as a central focal point for best practices;
6. provide CHDOs with staff and expertise when major expansions of existing air carriers occur; and
7. provide CHDOs with staff, advice and surveillance expertise when CHDOs have determined that an assigned carrier is under "stress."

The national certification team should be implemented methodically by building slowly around a nucleus of key team members. This approach is essential to ensure the success of the team in its virtual office environment. In FY 1997, positions should be filled in stages beginning with the management team. After the management team is in place, a contingent of team leaders should be selected. This core group should develop team procedures, training, and operating norms. The core group should perform at least one trial certification before selecting additional team members. By the end of FY 1997, as many as one-third of technical and support staff positions could be filled. The remaining positions could be filled in FY 1998 after the program has been validated.

Uniformly Apply the Gate Concept

The FAA should routinely follow the gate concept in processing FAA certificate applications. Use of the gate concept means that OST and FAA applications would be processed in a more, although not entirely, sequential manner. The FAA would consider the timeliness of the applicant's completion of its application requirements at each gate before proceeding to the next. According to FAA officials, it should take a well-prepared and qualified applicant no more than six months to complete the FAA certification process after issuance of OST's Order to Show Cause. Applicants should be notified that failure to complete the application requirements in a timely manner may result in the return of its application without further process.

The FAA could implement this procedure by reinforcing and standardizing the policy contained in the *Air Transport Operations Inspector's Handbook* (HBAT 95-14), by issuance of a corresponding Airworthiness Inspector's handbook bulletin, and by monitoring the FSDO's compliance with that policy. Once the national certification team was established, the use of gates would become part of the team's standard procedures.

Consistency in Filing Applications

To ensure consistency in the information being provided to both FAA and OST, applicants should be required to file a copy of portions of the OST application material with the FSDO with which it intends to file its application and file a copy of the FAA PASI with OST, along with any other documents that describe the type and number of aircraft to be operated. Complete applications would not have to be provided to each organization—only those portions relating to operating plans (i.e., markets to be served, aircraft to be used, and type of service to be performed) and management team.

OST should implement the proposal by forwarding copies of any pending applications to the appropriate FSDO and by including in its information packet for air carrier applicants a request to provide such copies to the FSDO. This information would be provided to the national certification team members assisting the FSDO. OST should incorporate this “service” requirement in a rulemaking that is being drafted to revise OST procedural requirements for all licensing cases (14 CFR Part 302).

The FAA should implement this policy by revising the guidance provided to applicants at the preapplication meeting. Copies of any PASI that are currently pending at FAA should be forwarded to OST.

Application of User Fees

Statutory changes are required for FAA's imposition of application fees. FAA will propose including in its FY 1998 budget request assumptions regarding collection of application fees.

OST has recently undertaken a review of all fees it charges for aviation licensing activities, which were last updated 10 years ago, and has targeted January 1997 for issuance of a notice of proposed rulemaking to update the fees.

ISSUE 2: RESOURCE TARGETING TO ADDRESS SAFETY RISKS

BACKGROUND

FAA Surveillance System

FAA surveillance of both new air carriers and established air carriers is prescribed predominantly by two internal orders, Order 1800.56, *Administration of Aviation Standards Activities—Program Guidelines*, (referred to as National Program Guidelines, or NPG), and Order 8000.49B, *Flight Standards Geographic Program*. These orders are complementary and are designed to provide systematic surveillance of all certificate holders in an economically efficient manner.

By design, the NPG focuses inspector surveillance on the large, mature airlines that carry 95 percent of the traveling public. The NPG was developed in response to GAO audit recommendations and tends to concentrate surveillance activities on the major air carriers. The NPG also ensures that every certificate holder annually receives a minimum level of inspection by specifying a mandatory work program, known as the “R” (for required) item work program, and a discretionary work program, known as the “P” (for planned) item work program. When interviewed for this report, the GAO and OIG were critical of the P-item program, which they believe causes repetitive surveillance that does not result in significant findings. Both organizations are proponents of better targeted surveillance. Flight Standards is working toward this goal, but has been cautious about reducing surveillance on the basis of low rates of negative findings when these results could be correlated with high frequencies of inspections.

The geographic program requires inspectors assigned to geographically dispersed FSDOs to perform surveillance activities on air carrier operations which occur within those FSDOs’ geographic boundaries. This work is accomplished by specialized inspectors known as geographic inspectors. If a FSDO is located at a major airport, a geographic inspector may be responsible for inspecting several different air carriers, each with unique procedures and practices. In some cases, the complexity of these work assignments creates problems in keeping inspectors current on both equipment and air carrier specific procedures. This often results in frustration on the part of the inspector who may feel ill prepared and on the part of the CHDO who questions the qualifications and findings of the geographic inspector.

The R-item surveillance programs are established at the beginning of the fiscal year for air carriers which are in operation at the time. Surveillance of new air carriers that are certificated after the beginning of the year is accomplished as a result of a special request from the CHDO or by autonomous decisions made by geographic inspectors.

Inspection results are documented, filed, tracked, and distributed in a national, automated system called the Program Tracking and Reporting Subsystem (PTRS). This system distributes the results of inspections performed by geographic inspectors to principal inspectors who are located in a geographically separated FSDO, referred to as the CHDO or as a Certificate Management Office (CMO) if the air carrier is defined as a mega-carrier (annual revenues in excess of \$1 billion and a fleet in excess of 100 aircraft). For example, a geographic inspector performing an inspection on a United Airlines aircraft in Chicago will transmit the inspection results through the PTRS data base to the principal inspectors who reside in the CMO in San Francisco.

The effectiveness of the geographic surveillance program depends on good communication and coordination between the CHDO/CMO and the remotely located geographic inspectors. In the past, the R-item work program has been assigned to geographic inspectors by means of a national, centralized, annual planning process, which emphasizes generalized, special emphasis items such as suspected unapproved parts detection as well as routine surveillance. P-item programs are formulated in consideration of nationally suggested emphasis areas, but they are planned and executed at the discretion of each FSDO with a geographic responsibility. P-items may be adjusted throughout the year and are balanced against competing priorities. Although CHDOs can request additional surveillance of their air carriers throughout the year, the program lacks a degree of flexibility in targeting surveillance activity in a dynamic environment.

Beginning in the Fall of FY 1997, the NPG R-item work program will be executed using a new process whereby CHDO's will assign each R-item inspection to be accomplished throughout the nation. This should allow for more specific targeting of inspections and an improvement in the data obtained in the process. This change is a significant step toward a more systematic and flexible surveillance program. Although the CHDO-directed R-item work program will be an improvement (to be implemented in FY 1997), this new process will not address the problem of a new air carrier which begins operations after the first of the fiscal year. The P-item work program will still be generated under the control of autonomous geographic inspectors and will continue to produce data which may be difficult for the CHDO to use.

New Approach to Improving Safety

In January of 1995, Transportation Secretary Federico Peña hosted a Safety Conference of over 1,000 aviation safety professionals from industry, labor, and government. One of the principal outcomes of this conference was the recognition that to move beyond the safety plateau that has been reached in air transportation, a new approach will be necessary. This new approach, which calls for a paradigm shift in thinking about aviation safety, relies on the analysis of large quantities of high quality data to identify potential safety issues and trends before accidents and incidents occur. FAA Administrator Hinson challenged conference participants to build the partnerships and tools necessary to make this shift and pledged the FAA's commitment to working with industry and labor to build this new safety system.

There are three key elements to this new system. First is the availability of high quality data. A significant portion of the most relevant data is currently not captured, saved or made available for analysis. As the quality and quantity of data from flight data recorders improves, this will be an important source of in-flight information. Air carriers are continuing to improve their recording of safety related data. As legal protections are put into place, they will begin to share this data with each other and the government. The documentation of FAA inspector activities is also being enhanced by programs which will improve PTRS and other data entry systems such as the On-line Aviation Safety Inspection System (OASIS) (discussed below).

Second, sophisticated computer analysis systems have not been available that can process large amounts of safety data. Several efforts, such as the Safety Performance Analysis System (SPAS) (discussed below) are underway to develop these analytic systems that can identify trends and do comparative analyses. The air carrier industry is also developing computer models and analysis systems that will become more important as the data problems are resolved.

Third, is the creation of models and systems for prioritizing and targeting safety resources to further investigate and correct potential safety issues identified through analyses. This involves both the industry response to weaknesses they identify and the FAA's method for assigning resources to inspect and

investigate problems. The FAA must work with the carriers to correct not only the identified problems but the systemic root causes of safety issues.

Information Sources

Safety inspectors in FSDOs have access to safety information through a variety of sources (i.e., information database systems and analytic tools). Among the most commonly used are:

- Flight Standards Automation System (FSAS);
- Integrated Safety Information System (ISIS);
- Service Difficulty Reporting Subsystem (SDR);
- SPAS;
- Monthly Air Carrier Utilization and Propulsion Reliability Subsystem;
- Airworthiness Directive Subsystem;
- NASIP and Regional Aviation Safety Inspection Program (RASIP) Reports; and
- OASIS.

Of these information sources, the two most vital to Flight Standards operations are FSAS and ISIS. The system offering the greatest productivity gains is OASIS.

FSAS is an automated database system which includes the PTRS, the Vital Information Subsystem (VIS), and the Automated Operations Specifications Subsystem (OPSS), among others. PTRS contains data on the type, frequency, and results of safety inspector work activities. Upon completion of a task such as an en route inspection, inspectors document the results on a PTRS transmittal form, and the data are entered into a local database at the FSDO. Local databases are periodically uploaded to a national database through a Wide Area Network (WAN). Information in the national database is then accessible to a variety of users through the WAN. PTRS transmittal forms permit inspectors to record the results of their work activities and to write comments based upon their opinions.

The VIS contains critical information about air operators (airlines), air agencies (pilot and ground schools, mechanic schools and repair stations), and airmen (commercial and general aviation pilots and individuals designated by FAA to act on its behalf). The type of information in the VIS for an airline, for example, includes the corporate address, main base of operation, key officials, and fleet size and types. The Automated OPSS is used to issue operations specifications to air carriers. This system will be used to document a recent requirement, directed by the Administrator, for air carriers to list heavy maintenance and training contractors on their operations specifications.¹²

ISIS is software that draws data from 12 database systems. Among others, these database sources include: Enforcement Information Subsystem (EIS), which contains data on enforcement actions against airlines, pilots, mechanics, and designees; Accident/Incident Data Subsystem (AIDS), which contains data on aircraft accidents and incidents; and Comprehensive Airman Information Subsystem (CAIS), which contains data on pilot proficiency certifications and pilot medical certifications.

¹² In a press release issued June 18, 1996, the FAA Administrator announced changes to strengthen the FAA's oversight of airlines that rely on contract maintenance and training by requiring carriers to list all contractors performing substantial maintenance and training in an airline's operating specifications. Further, use of any new contractor will require approval by the principal inspector before it is added to the operations specifications.

Information Availability, Processing, and Analysis

Flight Standards processes information through automated and manual systems. Automated processing occurs through local area networks in FSDOs which, in turn, are interconnected through a WAN. Thus, each field office has direct access to national databases such as FSAS and can query through different databases using ISIS. All offices communicate with each other and with regional and national headquarters by means of electronic mail. Many offices also have access to the Internet. Some reports such as NASIP and RASIP reports and Monthly Air Carrier Utilization and Propulsion Reliability reports are still predominantly used in hard copy format.

Currently, inspectors complete inspection reports, accident and incident reports, and other job-related forms in hard-copy which is later entered into automation systems by clerical personnel or by the inspectors themselves. Flight Standards is beginning to deliver a new tool, called the OASIS, to facilitate this process. OASIS will be used to gather inspection data, access reference materials, and instantly provide guidance for inspection tasks to streamline the inspection process. OASIS, which is delivered on a multimedia hardware system that operates in the field and can be docked in a workstation on the inspector's desk, speeds inspection activities and ensures necessary data reliability. The system contains all of the necessary inspection forms in digital format. It also gathers inspection data, eliminates redundant entries, and automatically transmits data to the PTRS local database. OASIS will automatically generate the complete set of letters and reports which must be completed or filed in connection with a work activity. The system will provide job aids for on-site use, and it will eventually contain an on-line reference to all major inspection resources such as FARs, Advisory Circulars, and Handbooks.

Additionally, NASIP and RASIP inspections are used to periodically review an air carrier's operations in depth. NASIP and RASIP inspections are conducted by teams of inspectors who use statistical sampling techniques to validate an operator's systems and to check for regulatory compliance. These inspections can be tailored to focus on any particular operational area, including outsourced maintenance or training, key personnel changes, change in fleet mix, or rapid growth. Criteria recently added to trigger NASIP inspections include enforcement investigation reports, growth rates, mergers, financial conditions, and accident/incident records.

SPAS is a new automated decision support system which is being deployed to help target inspection resources on those areas which potentially pose the greatest aviation safety risk. The system will process data from a variety of sources (currently 25 candidate databases). SPAS can compare the current-to-past performance of an air carrier to its own records or to the average performance of the entire industry segment in which the carrier is categorized. SPAS can also compare the performance of carriers and aircraft to spot early signs of trouble. Trend analyses, which once took several days and sometimes months to perform, can now be done in hours. SPAS is in Phase I of its deployment plan and is being used by 200 individuals throughout Flight Standards. Phase I deployment is designed to provide on-line access by principal inspectors for major air carriers, which carry approximately 95 percent of the flying public. By the time SPAS is completely deployed at the end of FY 1999, every principal inspector will have direct access to the system.

Principal inspectors receive reports on surveillance performed on their respective air carriers by geographic inspectors throughout the nation from the national PTRS database. Thus, principal inspectors now require a significant amount of discrete information from a myriad of data sources to monitor the performance of their carriers. SPAS will automatically integrate the discrete data and indicate to the inspector any anomalies in carrier performance. In response to such anomalies, principal inspectors will be able to target surveillance throughout the year if more specific information is needed or if special emphasis is desired in specific operational areas.

Currently, SPAS uses information obtained primarily from oversight and surveillance activities. SPAS accesses over two million PTRS surveillance records and VIS records. The system automatically registers data trends that exceed threshold criteria established for discrete industry segments. Thus, inspectors receive alerts, or flags, from the system when these trends occur. In and of itself, an alert does not mean that a safety problem exists. However, by issuing the alert, a principal inspector can explore the underlying data to determine if a problem exists that requires some kind of action. For example, SPAS will generate an alert when an air carrier's fleet expands or shrinks at a rate which is atypical of the rest of the industry. SPAS will also identify unusual turnover in required management positions, or spikes in surveillance reports which are coded as unsatisfactory or potential problems.

While the present configuration of SPAS does not generate alerts based on air carrier outsourcing or growth rates, the system would generate an alert if a significant number of problems were appropriately coded on PTRS records as a result of deficiencies noted during surveillance of outsourced maintenance or training. Also, future SPAS capabilities could be programmed to monitor the number of contractors listed in the Automated OpsSpecs Subsystem or the VIS or to consider the number of aircraft, routes or other measures of growth.

A new effort, which is being promoted by the FAA's Office of System Safety, is the Global Analysis and Information Network (GAIN). GAIN is different from SPAS in that it has a world-wide scope, while SPAS is designed primarily for users inside FAA to target resources. GAIN is envisioned as an analysis and information sharing framework to identify emerging safety concerns and to disseminate significant safety information to the international aviation community. GAIN will use data sources such as voluntary disclosure reporting, incident reporting, digital flight data, and air traffic control radar data and will process data using analytical methods such as qualitative risk assessment, data mining, data visualization, and statistical methods. FAA is bringing potential GAIN participants together in order to help create the system. It should be noted that FAA will neither own nor operate the system, instead being just one user.

The National Aviation Safety Data Analysis Center (NASDAC) is a state-of-the-art safety analysis facility, operated by FAA. The Office of System Safety operates NASDAC to provide on-site assistance to researchers and decision makers in assessing complex relationships and safety trends. NASDAC has a data storage capacity exceeding 300 billion bytes of information. Government and commercial data, domestic and international, will make up the data warehouse. Analysts perform integrated queries across multiple databases and display their analyses in a variety of useful formats. NASDAC also operates an Internet site for public access.

The information sources, communication systems, and analytic functions described above represent some, but not all, of the tremendous information resources available to Flight Standards. However, Flight Standards inspectors are not trained as analysts, and accessing all of the available information in order to search for safety trends is too time consuming to be feasible. SPAS will be a significant enhancement to the flow and analysis of safety information for inspectors once it is fully deployed at the end of FY 1999. High quality training will be required in the use and application of the SPAS system and the information it will supply. In the meantime, SPAS alerts do not routinely reach principal inspectors who are not among the 200 trained users of the system. Similarly, other safety information may not get to principal inspectors or other users within or outside of Flight Standards.

Data Quality

The ability of Flight Standards to use safety information efficiently is keyed to effective communications and good data quality. Flight Standards recognizes that some of its databases have vulnerabilities regarding data quality. The PTRS system has been criticized for inconsistent data entry and plain text

comments which are too subjective. Other data have been criticized regarding completeness and standardization, although considerable progress has been made in the last five years. Anecdotally, many inspectors complain that they lack training in general computer skills and in specific automation applications. Inspectors tend to correlate compromised data quality with lack of training.

Flight Standards has been working to improve overall data quality. The effort includes various analyses of PTRS defect rates, codification errors, and measurement of variation in inspector opinion ratings. In 1994, an intensive effort was undertaken to train all inspectors and supervisors on PTRS. Recently, FSDOs have developed data quality tools; a new PTRS procedures manual was published; and an effort with Sandia Laboratories is underway to examine the FAA's computer systems and recommend a comprehensive strategy for continuing to upgrade the agency's computer tracking and data system.

Flight Operations Quality Assurance (FOQA) and Safety Partnerships

GAIN and NASDAC are envisioned to process and analyze large volumes of data. The value of these systems depends upon the quantity, quality and variety of data available. Flight Operations Quality Assurance (FOQA) and safety partnerships are two programs which are being encouraged by FAA and are important to these efforts. FOQA programs are used by some airlines to analyze data from digital flight recorders to identify trends or anomalies with potential safety impacts. Many new flight recorders and aircraft provide an excellent data source. For example, the flight recorder on the Boeing 777 records 700 flight parameters eight times per second. Similarly, safety partnership programs, which are formally established between FAA and air carriers, permit collection of safety data through self-disclosure reports, which otherwise would be inaccessible. Complex analyses of these types of data will indicate trends and safety issues impossible to identify from accident data alone.

Safety partnership programs have the potential to allow the FAA to significantly leverage inspector resources in the future. As recommended in Challenge 2000, industry best practices for safety should be identified and validated and, as a carrier demonstrates superior self-audit safety programs, the FAA may be able to reduce the inspector resources providing surveillance to the carrier and monitor, including spot checks, the carrier's safety information. This is consistent with the Challenge 2000 recommendation that the FAA reduce hands-on inspections of those carriers that have demonstrated high levels of safety practices.

Follow-up and Enforcement Strategies

There is currently no enforcement plan of action which prioritizes violations discovered by inspectors that will allow the FAA to most effectively apply investigative and legal resources. In addition, inspectors are not always certain of their discretion to forego enforcement action when a violation is discovered, even if the violation is relatively minor and can be corrected on the spot. This leads to a wide range of violations that may not have a significant safety impact and may require more legal resources to prosecute than are available. At the same time, prosecution of these violations may detract resources from fully investigating or prosecuting more complex cases or cases which have a greater safety impact.

As the surveillance system becomes more targeted, the methods for following-up the findings of inspections must also be more strategic. Surveillance data collected should be analyzed, and areas targeted for enforcement, based on, among other things, the violations' impact on safety and whether voluntary compliance programs are appropriate methods for correcting deficiencies noted.

Partnership programs will require clear guidance to inspectors as to how to provide feedback to certificate holders. Under these systems, the air carrier will often identify safety issues and corrective actions to the

inspectors rather than waiting for the inspector to discover violations. Safety analysis systems will identify potential safety problems that are not violations, but that need to be communicated to the carrier. Ad hoc violations that are noticed but are not priorities for enforcement must also be communicated to the certificate holder even if no formal violation is filed. Finally, all of these safety issues and corrective actions must be documented into the data system for the analysis capabilities to be useful, even if no other formal action is taken.

ISSUE SUMMARY

- *The current system for determining surveillance requirements and assigning resources is based on providing minimal levels of surveillance to all air carriers rather than targeting surveillance on an assessment of safety risk.*
- *The current use of geographic inspectors is inefficient and does not always provide the most useful safety data to the CHDO that needs the data.*
- *The need for a system to assess risks has been identified by the FAA and the aviation community.*
- *The FAA and the aviation community are currently developing data collection systems and analytic tools to become more predictive and prescriptive about safety issues.*
- *A new approach to surveillance systems holds the prospect for leveraging FAA inspector resources for carriers that can demonstrate superior safety practices such as internal self audits that provide high quality safety data to the FAA.*
- *A new approach to following-up surveillance activities with feedback, corrective actions and enforcement, as appropriate, must be developed so that inspectors have the guidance to apply additional resources.*

RECOMMENDATIONS

Improve air carrier surveillance systems and follow-up activities to mitigate safety risks and increase the leverage of FAA resources. Ensure that safety information reaches the right people at the right time and continue efforts to improve data quality and analysis.

- 2.A Initiate a project to make surveillance of air carriers more systematic and targeted to deal with identified risks. The current system should be improved by requiring comprehensive annual surveillance plans for each air carrier. These plans should be managed by principal inspectors to validate their respective air carrier's systems and to target dynamically inspections throughout the year. Guidance should be provided to principal inspectors on when to reduce, or increase, planned surveillance based on safety analyses. Guidance should also be developed to link enforcement policy with targeted surveillance.**
- 2.B Provide for increased specialization and more efficient use of geographic inspectors. Geographic inspectors should receive their work program from the CHDO based on the identified targeted inspection needs. Limits should be set on the number of air carriers**

assigned to a single geographic inspector, and each inspector's territorial jurisdiction should be increased.

- 2.C Further develop air carrier partnership programs that promote safety data collection, carrier implementation of best practices, and methods for communicating and correcting potential safety risks.**
- 2.D Develop an enforcement strategy that will maximize utilization of inspector and attorney resources for the greatest safety and efficiency.**
- 2.E Create a centralized information management function within AVR. This organizational element should (1) disseminate safety information as directly as possible within Flight Standards and across organization lines and (2) assist information recipients in the interpretation of data. Information to be disseminated should include SPAS alerts to non users, NASIP/RASIP findings, Aviation Safety Reporting System (ASRS)¹³, and NASDAC safety information. The purpose of disseminating this information is to assist principal inspectors and other customers in targeting surveillance resources and taking necessary corrective actions to mitigate safety risks.**
- 2.F Develop a strategy and implement a quality assurance program that promotes the integration, continued analysis, and evaluation of present and developmental automation and telecommunication systems and processes. This program would ensure that improved quality of information is obtained within existing and future databases. This includes modifying systems to capture the data and develop analytic tools needed to monitor air carrier outsourcing activities and to identify potential risks related to air carrier growth rates.**
- 2.G Identify the training and job-aid requirements necessary to ensure that inspectors are adequately prepared to utilize the enhanced information and analytic capabilities to be provided by new systems such as SPAS and OASIS.**
- 2.H Expedite funding (F&E appropriation) and deployment of OASIS.**

IMPLEMENTATION STRATEGIES

Assigning Surveillance Resources Based on Risk

The FAA should initiate a project to revise the National Program Guidelines to develop targeted surveillance plans for all air carriers (new carriers and established carriers). This project should develop a template and methodology for creating a comprehensive annual surveillance plan for each air carrier. This plan should be developed by the principal inspectors and should be based on a methodology like the NASIP using statistical sampling and targeting geographic inspections to reach program goals. The plan should be dynamic, accounting for quarterly changes at a minimum, and cover the activities of the CHDO and geographic inspectors assigned to the air carrier.

¹³ National Aeronautics and Space Administration's Aviation Safety Reporting System, which contains data on aviation safety incident reports.

This project could be developed to make use of the new program, beginning in FY 1997, which provides CHDOs with responsibility for targeting R-item inspections. To expand the program, policy should be developed that directs geographic inspectors to give priority to P-item surveillance activities generated by CHDO's throughout the year. CHDO's should re-direct P-item surveillance in accordance with trends and anomalies perceived in safety information such as SPAS alerts received periodically throughout the year.

Improving Geographic Surveillance

In order to reduce duplication and fragmentation of surveillance activities, a policy should be developed which directs geographic inspectors to a limited number of air carriers and increases their areas of responsibility by authorizing them to cross FSDO and regional geographic boundaries. This project could expand current initiatives to allow CHDOs more responsibility for geographic surveillance work programs to more effectively focus and utilize inspector resources by expanding their jurisdiction to broader geographic areas, rather than restrict inspectors to the physical boundaries of their office. By carefully mapping the locations of geographic inspectors who are given wider areas of responsibility, a network could be established that would permit more specialized assignments for geographic inspectors. This scheme would have the benefit of reducing the number of air carriers for which each geographic inspector is responsible. Air carrier-specific training would be provided more easily to inspectors, and inspection quality should improve.

Another potential area of improvement is the standardization of geographic VIS database records to reflect more accurately the air carrier's true organization and facilities. This effort would require further development of the definitions within the VIS User Manual. Presently, the lack of clear, standardized definitions has led to confusion regarding database entries.

Also, inspectors could be authorized to utilize more fully the FSAS Planning Module for modifying fiscal year work programs on a quarterly basis. Although the planning module is normally used to forecast the entire year's surveillance work program, the procedures could be changed to permit quarterly modifications to the forecast program. Such a change would offer greater flexibility for managing more targeted surveillance programs.

Partnership

Partnership programs are currently in their infancy and not ready for implementation with all air carriers immediately. Such action is more likely to damage the program than enhance it. There are, however, immediate lessons learned that can be derived from the existing programs. The principal near-term implementation activity would be to redouble the efforts to remove impediments to partnership programs. Central to these impediments are the data integrity and security issues around FOQA and data sharing. The legal and legislative issues around the Freedom of Information Act (FOIA) must be dealt with quickly.

Enforcement Strategies

Initiate a project to develop a prioritization methodology for enforcement based on prioritized violations. Use existing databases, analytic systems, and subject matter experts to identify those safety violations that have the greatest safety impact and those safety violations that, if prosecuted, would have the greatest deterrent effect on the air carrier industry. Guidance material should be developed for inspectors that directs their approach to citing violations based on the prioritization methodology. This material should

specify those types of violations that are to be used for deterrent effect, those that must be cited under every circumstance, and those that fall under the inspectors discretionary judgment. The guidance should cover the range of follow-up and feedback mechanisms allowable for use by the inspector and the general rules for when each form of feedback or corrective action are appropriate. This guidance should also include guidance for feedback and correction in a partnership environment. Finally, the guidance should cover how discrepancies with the FAR that do not result in a violation should be documented in PTRS.

Centralized Information Management

Flight Standards should establish a group of specialists at the National Field Office whose primary tasks would be to (1) provide safety information such as SPAS alerts, PTRS trends, NASIP/RASIP findings, ASRS information, and data anomalies requiring further investigation directly to principal inspectors and other users inside and outside of Flight Standards; (2) assist users of safety information in understanding the underlying data and its validity; and (3) examines safety data to determine systemic needs such as data quality improvement, training, new data sources, and new safety indicators.

The purpose of disseminating safety information is to assist principal inspectors and other customers in the mitigation of safety risks by targeting surveillance resources to areas indicated by trends or anomalies in underlying data or by taking other corrective actions such as enforcement or system modifications.

Data Quality Assurance Program

Flight Standards should continue its comprehensive data quality initiative with Sandia Laboratories to implement its proposed long-term process quality management and improvement (PQMI) methodology and complete its short-term interim initiative to improve data quality in systems that tie into SPAS

development schedules. Along with these initiatives, several strategies could be considered including: a national initiative that integrates the adaptation of locally developed software such as the Baltimore FSDO Data Quality Tool¹⁴, qData¹⁵, and PrinSoft.¹⁶

OASIS

FAA should expedite completion of an F&E cost benefit study and accelerate funding for OASIS procurement and deployment. This \$22 million (3 year, F&E funding) system will substantially improve data quality and increase the efficiency of inspectors and clerical personnel. Furthermore, and most importantly, OASIS will enhance system safety by improving the quality of on-site inspection activities and by providing a vastly superior system to disseminate safety-critical surveillance information from geographic inspectors to principal inspectors.

¹⁴ PTRS data quality improvement software developed by the Baltimore Flight Standards District Office.

¹⁵ PTRS data quality improvement software developed by the San Francisco Certificate Management Office.

¹⁶ Software which is designed to enhance the use of PTRS data by principal inspectors and within the geographic inspector community.

Information Training

Inspectors and other FAA employees using these information systems require training and job aids to ensure that they are able to achieve the maximum safety impact from these systems. Such training and job aids must begin with correct data entry and developing in the users the necessary respect for the quality of the data for the system to be useful. The system should have a well engineered user interface that encourages complete and accurate data entry. Secondly, the users need training on how to manipulate the data in the system to arrive at accurate and useful results. They may also require information about how to get help from experts on statistics or data manipulation. Finally, these users will require training and job aids (perhaps in the form of “wizard” systems) to get the results out of the system in a useful and useable format. Strategies to be explored should include the establishment of a cadre of qualified field personnel to serve as FSAS instructors to conduct regional and intra-office training; and the addition of automation training requirements to individual training profiles.

ISSUE 3: NEWLY CERTIFICATED AIR CARRIER OPERATIONS AND GROWTH

BACKGROUND

Monitoring Growth

During the initial FAA certification process, the FAA requires an applicant to demonstrate that it has sufficient resources and the required operations, maintenance, and training programs to run the business at the time the certificate is issued. Similarly, OST issues its certificate based on the management team and financial resources needed to support the applicant's initial operating plan. As a result, applicants sometimes minimize the scope of their proposed operations and underestimate their rate of growth to meet OST's fitness and FAA's safety criteria.

Even where the infrastructure is in place to support a certain size of operation, as the carrier grows it does not always add the necessary personnel, internal control mechanisms, or financial resources to support additional aircraft or types of aircraft, or an expanded scope of operations. With growth, the carrier must consider, among other things, the adequacy of its management structure, personnel, contractors, and facilities, as well as maintenance and training differences, parts availability, and the impact of these factors on its current organization. Rapid growth at a new air carrier may lead to instability, financial difficulties, or other related problems such as high management turnover. Both the FAA and the carrier should be concerned with the possibility of the carrier spreading itself too thin. The FAA must also ensure that it has the resources and infrastructure to oversee new carriers.

However, there are no policies, guidelines, or models to help FAA inspectors determine when an airline is growing too fast and to identify whether that growth should be slowed to allow the carrier's overall system to catch up. Standard procedures do not exist for ensuring heightened oversight of an operating new carrier during its first several years of operation.

There may be a number of reasons for this. First, once an air carrier receives its OST and FAA certificates, the FAA surveillance system does not differentiate between an "established" air carrier and a newly certificated air carrier.¹⁷ However, most commenters agree that additional surveillance during the first several years of operation is warranted.¹⁸ Second, there is no formal process that provides for a coordinated OST and FAA review of the new air carrier. Third, there is no scheduled post-certification economic review performed by OST. Post-certification safety reviews are accomplished by the FAA through the Flight Standards annual work program and special inspections such as the NASIP.¹⁹

Once FAA and OST certificate a new air carrier, no adequate structure exists to monitor the growth of that carrier. While in some cases OST may limit the number or size of aircraft that a new carrier may operate or limit the duration of its authority, such limitations are not routinely imposed,²⁰ nor has the FAA

¹⁷ For purpose of this report "newly certificated air carrier" is one that has been certificated in the past five years.

¹⁸ Of the 51 jet air carriers that began service between January 1989 and July 1996, 12 (24 percent) have since ceased operations.

¹⁹ The National Aviation Safety Inspection Program, which is described in FAA Order 8000.68, calls for special, in-depth inspections of air carriers, air operators, and air agencies. The NASIP team includes inspectors selected from field offices nationwide. The FAA National Field Office, AFS-500, is tasked with management and oversight of the program. Currently, the program guidance does not stipulate any specific interval or event that would precipitate a NASIP inspection.

²⁰ OST sometimes imposes limitations or conditions where the applicant has a relatively small or weak management team, where the applicant has only enough financial resources to conduct the operation proposed in the application, or where the applicant's owners or officers have had a

typically placed such limits in a new air carrier's operations specifications. OST usually institutes a "continuing fitness" review of a carrier only if the carrier is having serious financial problems; has undergone a substantial change in ownership, operations, or management; or is experiencing severe or repeated compliance problems.²¹ However, OST does not routinely institute a review of a carrier's continuing fitness unless some significant event occurs that draws attention to the need for some form of limits or re-evaluation. Historically, rapid growth has not been one of these triggers.

Growth-Related Issues

The FAA procedures and guidance in use today do not prepare the agency to oversee rapid growth of a new airline or to maintain the heightened level of surveillance required by that growth. The FAA does not require the newly certificated air carrier to submit a business plan or projection of its expected growth and/or to explain how it will manage that growth with respect to safety,²² nor are the current FAA surveillance systems geared toward evaluating the carrier's growth against its ability to support that growth.²³ Even if an imbalance is identified, FAA inspectors are not trained in the statistical/analytic skills required to evaluate the information (inspectors are not hired with this expectation), nor are they given guidance about how to act on the information.

Moreover, even where rapid growth does not occur, new carriers often undergo a high turnover in personnel and/or substantial changes in their operations, particularly during the initial stages of their operations, as they attempt to establish their own "niches." Yet no guidance directs FAA inspectors to maintain heightened surveillance during an air carrier's early, formative years of operation when they may be the most unstable.²⁴

FAA inspectors and managers also report that, in some instances, key management individuals are hired by the new airline primarily to assist it in completing the certification process. Once the airline is operational, however, these key individuals leave and are replaced by a new management team who may or may not understand the manuals and processes established during the certification phase. The new management team may arrive at a critical point during the airline's expansion and may not be experienced enough to handle the transition. In addition, FAA managers report that they often must deal with consultants or contractors rather than the "permanent" managers or officers of the company who may not be in a position to speak for or make commitments on behalf of the airline. In recent cases, OST has responded to this concern by ordering new airline applicants to inform it immediately of such management changes and to provide full qualification statements and compliance histories on the new officials.

history of compliance problems too small to merit denial of the application but troublesome enough to warrant close monitoring of the new airline's operations.

²¹ Once a carrier is found fit by OST, it must remain fit in order to continue to hold its authority. Section 41110(e) (49 U.S.C. §41110(e)) requires OST to modify, suspend, or revoke the authority of any air carrier that OST finds has failed to comply with this "continuing fitness" requirement or has failed to supply such reports or other information as OST deems necessary to determine the carrier's fitness.

²² However, the addition of aircraft—whether of a different type or otherwise—often requires an amendment to the operations specifications.

²³ These concerns are also relevant to fleet expansion and diversification among "established" carriers. However, new carriers may encounter more difficulties with growth due to their relative inexperience.

²⁴ Information on key personnel changes and changes in fleet composition are now entered on the Program Tracking and Reporting Subsystem (PTRS). Under the Safety Performance Analysis System (SPAS), currently under development, an "abnormal" number of changes in key personnel or fleet composition, as entered in PTRS, will trigger a "flag" that tells an inspector reviewing SPAS to take a closer look at the air carrier. SPAS is expected to be deployed and made available to all field offices in 1997. At this time, SPAS "flags" do not differentiate between established air carriers and newly certificated air carriers. However, discussions with FAA officials indicate that the system could easily be modified to do this. In addition to SPAS, Joint Handbook Bulletin for Airworthiness and Air Transportation HBAW 92-19 and HBAW 92-15 provided for surveillance of financially distressed operators. Unfortunately, this bulletin was superseded by a change in the Air Transportation Operations Inspectors Handbook, which provides heightened surveillance only in complex bankruptcy, merger, or acquisition situations.

To ensure that adequate systems are in place, a number of commenters support the idea that there should be increased oversight of newly certificated air carriers by OST and FAA. One industry group stated that the FAA should not only require that new carriers have the necessary system in place “on paper,” but should play an active role in seeing that the systems are functioning.

ISSUE SUMMARY

- *The FAA surveillance system does not differentiate between an “established” air carrier and a newly certificated air carrier.*
- *Once a new carrier receives its OST and FAA certificates, there is no formal process that provides for a coordinated OST and FAA review of the new carrier. OST does not routinely institute a review of a carrier’s continuing fitness unless some significant event occurs that draws attention to the need for some form of limits or re-evaluation. Historically, rapid growth has not been one of these triggers. There are no policies, guidelines, or models for FAA inspectors to help them determine how fast an airline is growing and identify when that growth should slow to allow the carrier’s overall system to catch up, nor do standard procedures exist for heightened oversight of an operating new carrier during its first several years of operation.*
- *The FAA does not require the new carrier to submit a business plan or projection of its expected growth and/or to explain how it will manage that growth with respect to safety, nor are the current FAA surveillance systems geared toward evaluating the carrier’s growth against its ability to support that growth.*

RECOMMENDATIONS

Ensure that newly certificated air carriers have adequate resources and infrastructure to support stable and safe operations and growth.

- 3.A Heighten the level of surveillance of newly certificated air carriers for at least the first 5 years of the company’s operation.**
- 3.B Initiate periodic, coordinated OST and FAA reviews of newly certificated air carriers that assess management, financial, and operational capabilities.**
- 3.C Manage safe growth of newly certificated air carriers through FAA’s use of operations specifications that specify approved number of aircraft and aircraft types and scope of operations and, where appropriate, through OST’s increased use of conditional approvals.**

PROPOSED IMPLEMENTATION STRATEGY

Five-Year Heightened Surveillance Period

The FAA and OST should establish procedures to assess risks and target FAA resources during the first five years after a new air carrier commences operations. The enhanced inspection program envisioned by

this strategy would identify safety risks for new air carriers, profile risks for particular air carriers (based on outsourcing, fleet mix, growth rate, or other “high risk” posture) and target the necessary FAA resources to provide thorough surveillance of these risk areas. This program would also work to develop a partnership program with the air carrier so that industry “best practices” could be communicated to that air carrier and so that the air carrier develops the highest regard for self audits and identification of safety issues.

The program could be specially tailored for the new air carrier based on experiences with the applicant during initial certification. In addition, the FAA would need to develop guidance and procedures to differentiate the type of surveillance required for newly certificated air carriers from that which is required for an established airline. The program could be based on a methodology (i.e., the National Aviation Safety Inspection Program) using statistical sampling and targeting geographical inspections to reach program goals. The national certification team would work in conjunction with the CHDO in conducting this enhanced inspection program²⁵ and would assist in creating the specifics of the program.

Periodic FAA Safety and OST Financial Fitness Reviews

OST should include a provision in the new air carrier’s effective certificate (which is issued only after the company receives its FAA air carrier certificate) requiring the carrier to submit a 12-month “progress report” on its operations. This report would include information on the new carrier’s current operations (including aircraft fleet), future operating plans, updated financial statements, and information on any changes in ownership or management. OST would also (1) review available information on the new carrier, including the quarterly financial reports filed by that air carrier under 14 CFR Part 241, and (2) contact the carrier’s FAA principal inspectors to ascertain whether the carrier was experiencing any frequent or unusual safety compliance problems. Once this information was received, OST would decide whether to conduct a more in-depth review based on whether substantial changes had occurred in the carrier’s operations, management, ownership, financial condition, or compliance record since its initial certification. If a more in-depth review was initiated, OST would determine what specific areas of the carrier’s operations should be reviewed, obtain any necessary input from FAA, and would share any findings or recommendations with FAA.

In a similar manner, FAA would conduct a separate but concurrent “progress” review. This review would be a follow-up to the certification process and would be accomplished by the FSDO staff with assistance from the national certification team. The review should focus on the impact of any changes in management or operations since certification and should assess recent performance to spot any trends that could have a negative impact on future performance or expansion. In addition, the review should include an analysis of the carrier’s quality assurance function to ensure that the company had identified and taken action to correct any negative trends. These reviews would be established as an interim measure until such time as SPAS had been implemented and working acceptably.

A copy of the report(s) of the special inspection team would be provided to the new air carrier’s president or chief executive officer to ensure that the air carrier’s top-level management is aware of and involved in the findings of any inspections. In addition, the president or chief executive would be asked to attend any out-briefings related to the findings of the report(s) and to be involved in preparing or presenting the carrier’s response to the FAA.

Follow-up reviews by OST and FAA would take place 24 months after start-up, unless circumstances warranted an earlier review or OST and FAA each determined that their own reviews would serve no

²⁵ These procedures would also be used in conjunction with the SPAS “flags” once that program is deployed to all of the field offices.

substantial benefit. These reviews could be used to monitor the growth plans of the air carrier. For newly certificated air carriers that have been in business longer than 24 months, but less than five years, FAA and OST would determine whether these reviews were needed. Carriers that had undergone a fitness review/inspection within the preceding year would not have to undergo such reviews unless circumstances warranted.

FAA could implement this policy on an individual basis after establishing the national certification team. OST would not be able to implement this policy without supplementing its existing air carrier fitness staff—a total of six analysts who are responsible for handling all new applications and all current continuing fitness reviews. An additional three financial analysts would be required in order to review all existing air carriers and any newly authorized carriers and to analyze whether a 12-month or 24-month review is required based on the circumstances of each case. Once that review was completed, those and other analysts would be needed to conduct the reviews.

Growth Models

A growth model for FAA inspectors should be established that depicts what a carrier needs from a safety perspective to operate a small and/or mixed fleet of aircraft (e.g., personnel, equipment, facilities, training, and maintenance), and what is required for a larger operation as the carrier grows. The FAA could develop this model using a team of Flight Standards inspectors working with the FAA's Office of Aviation Policy and Plans and outside consultants, if necessary. As part of this effort, the team could review the management-to-personnel-to-systems-to-aircraft ratios of existing air carriers who have successfully managed their operations through growth periods.

The model should include “triggers” that indicate when a new air carrier proposes to expand its operations (such as by the addition of aircraft—whether the same or a different type) to ensure that the new air carrier's automated systems; quality control systems; staff sufficiency in terms of numbers, training, and experience; and contractor oversight are adequate for the safe conduct of its business. Once SPAS is deployed agency wide, this growth model could also be used in conjunction with the SPAS “flags” to evaluate air carrier growth.²⁶

As the FAA moves to a resource targeting approach to surveillance, this growth model can be incorporated into the process. In addition, the model could be applied to monitor growth of established carriers.

Managing Safe Growth

The FAA should develop policies and guidelines to include limitations in a newly certificated carrier's operations specifications on the size and/or number of aircraft types, makes, or models and the scope of the carrier's operations until it proves that it is capable of expanding operations without compromising safety. This can be accomplished by having the FAA issue operations specifications that include “triggers” based on the growth model (described above) that is developed. To expand, the carrier would have to demonstrate that it had the infrastructure necessary to support such expansion. The growth model would serve as guidance to the inspector in reviewing the air carrier's proposal. FAA should advise OST of the proposed change so that OST could determine whether further economic fitness review was necessary.

²⁶ SPAS provides inspectors with analytical data but it does not provide information on how to use or interpret the data. The growth model would, in part, fill that void.

Operations specifications revisions would be approved by the FAA when it determined that the carrier's infrastructure was adequate and where OST has no objection based on any economic review it may have conducted. Under this scheme, a carrier would also be required to move back to a previous trigger until its operational capabilities could be determined by FAA and OST.

OST should continue and expand its policy of including limitations in new carrier certificates, where appropriate, requiring them to re-establish their fitness if they propose a substantial expansion of their operations. Any such conditions should still allow for reasonable growth by the new carrier without resulting in OST's micro-managing the company or having to conduct a fitness review each time a new aircraft or market is added. Such conditions would be coordinated with the FAA to determine whether similar restrictions should be placed in the carrier's operations specifications. If the carrier wanted to expand, OST would review the proposed change from an economic fitness standpoint and would coordinate with the FAA to ensure that FAA standards had been met. OST could implement this policy by imposing the conditions in fitness orders.

Many commenters agree that there should be better OST/FAA control and oversight of growth to ensure that a newly certificated air carrier has the financial resources and management and personnel infrastructure to support stable growth, but they caution against placing limits without a justifiable safety cause. One industry group summarized by noting that it was "opposed to any regulatory initiatives which would place limits upon the rate of growth, the variety or configuration of a carrier's fleet, or the degree of maintenance outsourcing that a carrier may choose. Growth, of course, must be controlled to a rate that assures airworthiness and safety."

Use of FAA National Certification Team

The national certification team should be used to conduct periodic follow-up reviews. This would ensure consistency in initial certifications as well as in follow-up reviews. The inspectors would be specially trained to recognize subtle evidence of problems caused by growth-related safety issues. If findings are made that require subsequent enforcement action, the inspection team would assist the principal inspectors in preparing background or other documents needed for the initial stages of the enforcement process.

ISSUE 4: OUTSOURCING AND VARIED FLEET MIX

BACKGROUND

Aviation Industry Business Practices

As a result of deregulation, the current aviation industry includes a large number of smaller airlines with rapidly changing operations. The current OST and FAA certification processes feed start-ups into the airline industry at a rate of approximately seven large jet operators per year.²⁷ These new air carriers, more likely than not, start small and outsource high-cost items such as maintenance and training to independent contractors.²⁸ For example, a Part 121 air carrier may contract for maintenance with another Part 121 air carrier or a certificated Part 145 repair station, which may in turn contract out some services to licensed mechanics not affiliated with a Part 145 repair station (see 14 CFR Part 145). In the flight operations area, a Part 121 air carrier may contract out its Approved Training Program to a Part 142 training center.

This shift in functions, which were once performed almost exclusively in-house by most air carriers, has implications for the OST and FAA certification processes. Until recently, in their review of applicant qualifications, neither OST nor FAA requested specific information about which contractors would perform the maintenance or training, who would oversee the quality of the work performed, nor how that oversight would be accomplished. In an effort to mitigate the potential negative impacts of outsourcing, the Administrator announced on June 18, 1996, a six-point program that outlines changes to the FAA air carrier inspection practices regarding substantial maintenance performed by contractors, including oversight of those contractors by the air carrier.

The agency's principal inspectors will require airlines to demonstrate the regulatory compliance of each of their major contract maintenance and training programs.

The FAA's principal inspectors will require that carriers list all contractors performing substantial maintenance and training in an airline's operating specifications. Use of any new contractor will require approval by the principal inspector before it is added to the operations specifications.

Before use of new contractors is approved by the principal inspector for addition to the operations specifications, the carrier must conduct an audit of the contractor.

The FAA also will create new oversight requirements for inspectors who monitor repair stations and training centers. These new oversight requirements will require that new tasks be developed to provide special attention to airline maintenance activities being carried out at repair stations. For example, FAA inspectors now will be required not only to check the compliance of repair activities with the regulations governing the repair station, but also to check that the carrier assures that the maintenance and repairs done by the station are in compliance with the airline's maintenance program.

In addition to outsourcing, another area of concern involves the use of a varied aircraft fleet mix. Air carriers using a variety of aircraft types, or a mix of models of the same type, have a far more complex

²⁷ Between 1989 and July 1, 1996, OST received 98 applications for large jet (over 60 seats) air carrier certificates, an average of 14 per year, approximately half of which never received OST and/or FAA authority and thus never commenced operations.

²⁸ Outsourcing is not, however, used exclusively by new entrant carriers. Many established carriers contract out some of their maintenance and training functions.

operation than those using a single fleet make and model. While many new air carriers do not initially plan to operate a varied mix of aircraft, they may be more likely to do so because it may be cheaper to acquire whatever aircraft are currently “available.” In some instances, these aircraft are available because they are models that were turned back into the marketplace due to new purchases and trade-ins by larger air carriers. More often than not, the maintenance of these aircraft can be expensive, resulting in the new air carrier assuming potentially huge maintenance costs at a financially delicate stage of its development. Moreover, a varied fleet mix increases the demands for managing items including different maintenance procedures and practices, multiple maintenance manuals, crew member and mechanic training, training manuals, ground support equipment, and scheduling and inventory costs.

For an air carrier using a variety of aircraft types or a mix of models of the same type, the certification process and continuing surveillance do not include an analysis to determine whether the applicant’s or air carrier’s resources and infrastructure can support the complexity of those operations. For example, FAA guidance does not differentiate between a carrier that will operate a fleet of the same type and model aircraft from an air carrier that will operate a varied fleet mix.²⁹ Nor does the FAA certification process require information on the applicant’s competency and management approach to providing quality assurance in its contract maintenance and training programs, in light of the fact that it will operate a varied fleet mix. This issue also arises at a later date when the air carrier enlarges its fleet to include a greater number or variety of aircraft types or a mix of models of the same type.

Another problem may arise when a new carrier is allowed to adopt the maintenance program of an established airline through contractual arrangements. In most instances, the established carrier has earned the ability to operate at higher inspection and overhaul intervals through experience proven over a long period of time. Often, the new carrier has not demonstrated such ability. Use of the established carrier’s maintenance program may be a money-saving venture for the new carrier, yet may not be the best safety practice.

In addition, present guidelines require an air carrier to provide a “Statement of Compliance,” but there is no provision for the air carrier to maintain “Statement of Compliance” current. In most instances, all the carrier submits after initial certification to show compliance is a bare statement that the air carrier’s “manual is not contrary to any FAR.” This bare minimum requirement results in FAA Inspectors having to spend countless hours reconstructing compliance with specific regulations that could otherwise be spent on other safety-related duties.

Numerous commenters within and outside the agency uniformly believe that the FAA should not impose restrictions on the numbers or kinds of maintenance and training contracts that can be entered into by air carriers or the types and kinds of fleet mix that a carrier may have, whether new air carrier applicants or established carriers. One air carrier remarked that “there is no valid reason to place arbitrary limits on the amount of work outsourced.” Most of those interviewed—including Government oversight agencies and trade associations—believe that it may be a better and safer practice for a new applicant to use contract services such as an established, specialized repair station to do sophisticated maintenance. However, all agreed that the FAA needs to better scrutinize the resources and infrastructure that an applicant/air carrier must have to enter into substantial outsourcing arrangements or to operate a varied fleet mix. Moreover, they emphasized that FAA needs to better monitor an air carrier’s oversight of its contractors and the performance of contracts by repair stations, training centers, and others.

²⁹ Information on fleet composition is now entered on PTRS. When the Safety Performance Analysis System becomes available to all field offices, an “abnormal” change in fleet composition will trigger a “flag” that tells an inspector reviewing SPAS data to take a closer look at the air carrier. Guidance on how to evaluate the information will still be required.

FAA and OST Requirements

The current regulatory scheme and FAA policy provide that even when maintenance and training are contracted out, the Part 121 air carrier bears the ultimate responsibility for ensuring that the maintenance and training are conducted in accordance with its manuals and Part 121 rules (see 14 CFR §121.363 and §121.401 in Appendix C, page C-20). When an air carrier contracts maintenance to a Part 145 repair station, the repair station has the responsibility under Section 145.2 to perform the work in accordance with the air carrier's maintenance program. The same applies to a situation where a contractor subcontracts the Part 121 air carrier work to another certificated entity.³⁰

Under the current certification scheme, OST does not include any examination or review of an applicant's intent to enter into outsourcing contracts or of the capabilities and experience of the responsible key persons to carry out the contractor oversight responsibilities now imposed by existing FAA regulations. For example, the OST application does not require information on an applicant's intent to outsource maintenance and/or training, although it does require the applicant to provide a first-year business plan. The OST application does not require specific information on corporate roles and responsibilities relating to oversight of contract maintenance and training or information sufficient to evaluate the adequacy of the applicant's budget and personnel when it proposes to operate a mixed fleet of aircraft.

Recent FAA and OST Actions

In addition to the Administrator's six point program, the Director of AFS issued a policy memorandum assigning responsibility to the Flight Standards National Field Office responsibility for overall management of the implementation and tracking of these new oversight requirements. It also directed this office to work with the respective Flights Standards policy divisions to develop and publish guidance for that implementation and tracking.

As a result, on July 31, 1996, the Aircraft Maintenance Division developed and published *Flight Standards Handbook Bulletin for Airworthiness* (HBAW-96-05). This bulletin provides for a change in air carrier operations specifications requiring the air carrier: (1) to list, on its operations specifications, contractors who perform substantial maintenance; (2) to pre-qualify new contractors before they can be authorized for use; and (3) to evaluate contractors currently being used.

The *Handbook Bulletin for Airworthiness* also provides guidance to FAA inspectors on the type of information they should expect from an air carrier seeking to demonstrate that contracted-out services are being performed in accordance with the air carrier's approved programs, manuals, and FAA rules. However, this guidance does not address how to analyze the information to determine whether an air carrier's corporate structure will effectively integrate into its safety program the diverse services provided by its various outsourced maintenance and training contracts.

Also following the Administrator's announcement, the Air Transportation Division developed and issued *Air Transportation Operations Inspector's Handbook Bulletin* (HBAT 96-06). This bulletin outlines a self-audit program for all Part 121 air carriers (and Part 135 air carriers in transition to Part 121) that outsource flight crew training to training providers. It directs Principal Operations Inspectors (POIs) to ensure that air carriers with outsourced crew training undertake the following activities immediately: (1)

³⁰ The only exception to the requirement that maintenance always be accomplished in accordance with the air carrier's manual can arise when a Part 121 air carrier contracts with another Part 121 air carrier. In that situation, two alternatives are available. The first alternative requires that the contractor perform all maintenance in accordance with the certificate holder's manual. The second alternative requires the contractor to perform all or part of the maintenance in accordance with its own manual. The second alternative must be authorized by the issuance of appropriate operations specifications to the certificate holder for which the maintenance is being performed.

document that the training program delivered by the training provider is identical to the training program approved for the operator's use by the POI; (2) audit curricula and document that those curricula presented by the training provider adhere to the curricula contained in its FAA-approved training program; and (3) observe the training provider's check airmen and designated examiners and document that applicable regulations are being met and that approved testing standards are being maintained. In addition, the bulletin directs the POI to undertake whatever steps are deemed necessary to address any discrepancies found during the performance of these audits.

Recent OST reviews of new applicants have considered organizational and managerial qualifications necessary for new air carriers to engage in substantial outsourcing of maintenance and training. However, these requirements have not been formalized.

Accountability

Deficiencies in the certification process (regarding the adequacy of the carrier's infrastructure to support outsourcing and auditing responsibilities), coupled with the past lack of clear guidance to FAA inspectors and the industry, have contributed in some cases to a lack of air carrier accountability for contractor or subcontractor work. While commenters uniformly acknowledge that legal responsibility remains with the air carrier, this does not always translate into adequate oversight. The lack of accountability is often further complicated when multiple layers of subcontracting occur.

This situation may be further exacerbated when a repair station, with several branches or satellite facilities, is managed by several different Flight Standards District Offices and several different inspectors. The "parent" repair station and its different "satellites" may be managed under different Regional philosophies, concepts, and even personal preferences. This may result in the "parent" repair station and its "satellites" having quite different manuals, manual revisions, and operating procedures. These differences may have an impact on the oversight by both the air carriers and FAA inspectors of repair stations performing contract maintenance.

Another problem may arise when a new air carrier is allowed to adopt the maintenance program of an established airline through contractual arrangements. In most instances, the established carrier has earned the ability to operate at higher inspection and overhaul intervals through experience proven over a long period of time. Often, the new air carrier has not demonstrated such ability. Use of the established carrier's maintenance program may be a money-saving venture for the new air carrier, yet may not be the best safety practice.³¹

Moreover, an air carrier's principal inspector is not consistently made aware of discrepancies discovered by an inspection of a contractor performing outsourced work for his or her carrier. This lack of coordination occurs, in part because the PTRS does not require that the contractor deficiencies be "coded" to connect the PTRS entries to the air carrier for which the work is being performed. Therefore, deficiencies found by the repair station principal inspector may or may not be reviewed by the air carrier's principal inspector when evaluating the air carrier's outsourcing.

³¹ For example, a new entrant may enter into contractual maintenance arrangements with a seasoned/experienced operator and take advantage of that operator's increased maintenance intervals, changed maintenance processes, and/or maintenance programs. An example may be a new entrant airline (Airline A) that contracts with experienced Airline B. The manufacturer's recommended "C" check interval is 3000 flight hours, but Airline B's interval is 5000 flight hours. Airline B's "C" check interval was approved based on its reliability program and experience. Although Airline A has no experience or reliability program, it is allowed to start at a 5000 flight hour "C" check interval because it entered into a contractual maintenance arrangement with Airline B. This same situation could occur with parts overhauls and time limits or with maintenance processes that have changed from "Hard Time" to "On Condition" or from "On Condition" to "Condition Monitored."

ISSUE SUMMARY

- *The certification and surveillance processes used by OST and FAA did not adequately consider the organizational requirements of new air carrier who intend to engage in substantial outsourcing of maintenance and training or by new air carrier using a varied fleet mix. Deficiencies that exist in the OST and FAA processes include: 1) lack of OST examination of an applicant's intent to enter into outsourcing contracts or of the capabilities and experience of the responsible key persons to carry out the contractor oversight responsibilities now imposed by existing FAA regulations; 2) lack of OST requirement for information sufficient to evaluate the adequacy of the applicant's budget and personnel when it proposes to operate a mixed fleet of aircraft; and 3) inadequacy of guidance to FAA inspectors on how to determine whether an air carrier's oversight of outsourcing is adequate.*
- *Oversight of contract maintenance activities is complicated by FAA inspection management and communication practices. A repair station organization with several branches or satellite facilities may be managed by different FSDOs resulting in the "parent" repair station and its "satellites" having quite different manuals, manual revisions, and operating procedures. These differences may have an impact on the oversight of repair stations performing contract maintenance by both the air carriers and FAA inspectors. Furthermore, deficiencies found during repair station inspections may not be brought to the attention of the principal air carrier inspector when evaluating the air carrier's outsourcing practices.*
- *Deficiencies in the certification and surveillance processes (regarding the adequacy of air carrier infrastructure to support outsourcing and oversight responsibilities), coupled with the past lack of clear guidance to FAA inspectors and the industry, have contributed in some cases to a lack of air carrier accountability for contractor or subcontractor work. The lack of accountability is exacerbated when multiple layers of subcontracting occur.*

RECOMMENDATIONS

Ensure that all air carriers have adequate resources and infrastructure to support outsourcing and operation of a varied fleet mix. Require specific information related to outsourcing and fleet mix in the OST and FAA applications. Increase OST and FAA scrutiny of these factors in determining an air carrier's initial and continuing qualifications to operate.

4.A Require more information in the OST application on outsourcing and operation of a varied fleet mix including:

- **the percentage and type of in-house vs. contract maintenance and training;**
- **what corporate position will oversee contract maintenance and training, to whom that person will report in the corporate structure, how the oversight will be accomplished, and whether the position is full-time or part-time; identity of the individual designated to serve in the position and his or her credentials to oversee contracts of this type; and**
- **the adequacy of the applicant's maintenance and training budgets if it proposes to operate a mixed fleet of aircraft.**

- 4.B** Require that specific items on outsourcing be included in the air carrier’s manual and incorporated by reference in the operations specifications issued to the carrier:
- the percentage and type of in-house vs. contract maintenance and training;
 - the identity of the corporate position that will oversee contract maintenance and training, to whom in the corporate structure that person will report, how the oversight will be accomplished and whether the position is full-time or part-time;
 - how the corporate structure will integrate into its safety programs the diverse services provided by its various outsourced maintenance and training contractors.
- 4.C** Encourage the air carrier industry to develop a model contract for outsourcing. Encourage inspectors to routinely evaluate outsourcing contracts as required by existing guidance and to use the model contract as an additional evaluation tool.
- The model contract should address issues of concern, such as:
- oversight and audit systems and programs that conform to regulations;
 - access by the FAA to a contractor’s facility (although the FAA already has the right to inspect these facilities, the contract clause will decrease the need to gain the access by issuing subpoenas or by pursuing litigation);
 - adequacy of staffing levels and sufficiency of the facilities and equipment to support a varied fleet mix; and
 - adequacy of record keeping and exchange of information with the contractor.
- 4.D** Develop guidance and training to give inspectors a broader perspective on air carrier operations and to help them recognize and identify systemic deficiencies.
- 4.E** Establish policy and guidance requiring a new air carrier to adhere to the manufacturer’s maintenance program, time intervals, and maintenance processes.
- 4.F** Develop policy that provides for air carriers to maintain a current Statement of Compliance.
- 4.G** Develop common policies and procedures applicable to “parent” and “satellite” repair station certification and surveillance.

PROPOSED IMPLEMENTATION STRATEGY

Enhanced OST Application

If an applicant proposes to contract out all or part of its maintenance and/or training functions and/or operate a variety of aircraft types, or a mix of models of the same type, materials in the OST application should require more information pertaining to its oversight and management of outsourcing or operation of a varied fleet mix. Specifically, the application should 1) specify the percentage and type of in-house vs. contract maintenance and training; 2) indicate what corporate position will oversee contract

maintenance and training, to whom in the corporate structure that person will report, how the oversight will be accomplished, and whether the position is full-time or part-time; identify the individual designated to serve in the position and present his or her credentials to oversee contracts of this type; and 3) demonstrate the adequacy of the applicant's maintenance and training budgets if it proposes to operate a mixed fleet of aircraft.

Current OST rules (14 CFR Part 204, page C-4) do not specifically require the information proposed above, although they do allow OST to "require an applicant to provide additional data if necessary to reach an informed judgment about its fitness" (14 CFR §204.3, page C-5). OST could implement a policy to request this additional information by including it in the information packet for applicants, in letters to applicants requesting additional information, and in fitness orders proposing to dismiss applications for failure to comply with OST application standards. However, future rulemaking requiring this specific information may be useful and appropriate.

Inclusion of this information on the OST application would serve to alert the applicant of the need to provide for the necessary resources and infrastructure to support outsourcing or the complexity of a varied fleet operation. It would also facilitate OST's determination of whether the new air carrier's business plan and financial projection adequately address these requirements. OST would coordinate, as appropriate, with the FAA national certification team.

Corporate Accountability

If an applicant proposes to contract out all or part of its maintenance and/or training and/or operate a variety of aircraft types, or a mix of models of the same type, the FAA should require that the following items be included in the carrier's manual and incorporated by reference in the operations specifications issued to a new carrier: 1) the percentage and type of in-house versus contract maintenance and training; 2) the identity of the corporate position that will oversee contract maintenance and training, to whom in the corporate structure that person will report, and whether the position is full-time or part-time; 3) the identity of the corporate position that will be accountable for the safety audit function and to whom in the corporate structure that person will report; 4) how the corporate structure will integrate into its safety programs the diverse services provided by its various outsourced maintenance and training contractors.

The inclusion of this information in the air carrier's manuals and appropriate operations specifications will assist inspectors in reinforcing accountability in this area. It will also assist both the inspector and the air carrier when looking back to determine whether the air carrier's system is keeping up with changes related to outsourcing.

Model Contract

The FAA should encourage the air carrier industry to develop a model contract for outsourcing and encourage inspectors to routinely evaluate outsourcing contracts as required by the Airworthiness Inspectors Handbook (Volume 2, Chapter 69) and to use the model contract as an additional evaluation tool. The model contract should address issues as set forth in recommendation 4C.

Use of model contract and subcontract clauses, drafted to address issues of concern and following Federal rules and FAA guidance, would greatly decrease the time required for inspectors to review outsourcing contracts and subcontracts. Use of the model contract and subcontract clauses would also facilitate compliance by air carriers, repair stations, and Part 43 entities entering into contractual arrangements by providing suggested ways to perform adequate oversight.

Inspector Guidance and Training

As air carrier business practices become more complex, inspectors will need additional knowledge and skills in business and finance. Guidance and training programs should be developed to give inspectors this broader perspective and to help them recognize and identify systemic deficiencies within an air carrier. The training and guidance would provide the inspector with tools relating to business management and the corporate culture of an air carrier, thereby enabling him or her to more easily identify a corporate structure or culture that might undermine an air carrier's ability to implement and sustain its quality assurance programs. The inspector would also be better prepared to detect situations where business pressures and cost constraints create a corporate culture that encourages or tolerates cutting corners, that overlooks sloppy practices or record keeping, or that tolerates safety risks. This proposal can be implemented by adapting existing courses in the private academic sector and by expanding current courses available at the FAA Academy, such as the "Evaluation of Aviation Management Systems" course.

Manufacturer's Maintenance Program

Policy and guidance requiring a new air carrier to adhere to the manufacturer's maintenance program, time intervals, and maintenance processes should be established. A new air carrier should not be allowed to enter into a contractual maintenance arrangement with an established airline using increased intervals, revised maintenance processes, and/or a changed maintenance program until appropriate operating experience is gained. A deviation from the manufacturer's recommended maintenance practices and time intervals and/or maintenance processes may be approved once the new air carrier gains appropriate operating experience and has demonstrated its ability to properly maintain its aircraft. The implementation of this action would create a standard with "known and proven" benchmarks based on the manufacturer's experience and history related to the product. The FAA could implement this policy by revising Order 8300.10, *Airworthiness Inspector's Handbook*, (vol. 2, chapters 64 and 84, and via operations specifications paragraph D77 or D78).

Statement of Compliance

The FAA should develop policy that provides for air carriers to maintain a current Statement of Compliance. A Statement of Compliance references where compliance with a specific FAR can be found in an air carrier's manual.³² The Statement of Compliance should outline, by reference, the current programs, procedures, policy, and methodology through which the air carrier addresses regulatory requirements, including oversight of maintenance and training contractual agreements. The Statement of Compliance would have a multiple purpose: 1) to demonstrate the air carrier's compliance, 2) to compel the air carrier continually to go back to ensure that oversight requirements are addressed when entering into or expanding contractual agreements, and 3) to facilitate surveillance by inspectors.

This could be implemented by requiring air carriers to update and maintain current their Statements of Compliance, now part of the certification process. In addition, such a statement is authorized by new Sections 119.49(a)(13) and (b)(13). These Sections allow the Administrator to require air carriers to add to their operations specifications "any item the Administrator determines is necessary." The requirement is applicable now to air carriers certificated after January 19, 1996, and will become applicable to all other air carriers on March 20, 1997.

³² Section 121.135(b)(3), *Manual Requirement Contents*, now requires the air carrier manuals to have "reference to appropriate Federal Aviation Regulations." Section 121.135(a)(4) requires that each manual required by §121.133 "not be contrary to any applicable Federal Aviation Regulation." In most instances, all the carrier submits after initial certification to show compliance with §§ 121.135(a)(4) and 121.135(b)(3) is a bare statement that "the manual is not contrary to any Federal Aviation Regulation."

Repair Stations

Common policies and procedures should be established to ensure that a “parent” repair station and its “satellites” use a common set of instructions, minimizing inconsistencies between the operations of these facilities. Having common policies and standards applicable to certification and surveillance would simplify the oversight of the parent repair station and its satellites, including the oversight of procedures, manuals, and necessary manual revisions.

The FAA could implement this policy by revising Order 8300.10, *Airworthiness Inspector’s Handbook*, (vol. 2, chap. 162) and Order 8000.49B, *Flight Standards Geographic Program*, and by amending the PTRS manual to provide direction to geographically assigned inspectors of Part 145 repair stations to route significant safety information relating to Part 121 contract maintenance to the principals of those air carriers (see Appendix D for references to FAA Orders). A longer-term solution would be to assign a single Principal Maintenance Inspector (PMI) to oversee the parent repair station and its satellites. This PMI would serve as the single point of contact, assisted by the geographically assigned inspector. This would simplify the oversight of contract repair stations by both the FAA and the air carrier.

ISSUE 5: INSPECTOR AND AIR CARRIER GUIDANCE MATERIAL

BACKGROUND:

Available Guidance Materials

The guidance materials available to aviation safety inspectors and to air carriers come in many forms. The guidance provided to inspectors consists of FAA Orders, which are commonly called “Handbooks”³³; Handbook Bulletins; Flight Standards Information Bulletins; Air Carrier Operations Bulletins; Notices; FAA policy memoranda; FAA policy letters; and Advisory Circulars. These various forms of guidance material are also made available to industry, though many are not required for regulatory compliance.

The *Handbooks* are policy and procedure documents, each of which is intended to address a particular subject matter area (i.e., airworthiness, air carrier operations, general aviation operations, certification of aircraft and related parts, and enforcement functions). Some of the Handbooks, at least in part, cross lines of expertise and provide guidance that may be viewed as conflicting.³⁴ Each handbook is developed and maintained by experts in that particular subject matter area at FAA Headquarters. The level of effort and lead time associated with the revision of these handbooks mandates withholding discrete changes until their extent warrants a major handbook revision. *Handbook Bulletins* are used to disseminate guidance to inspectors between major revisions to the Handbooks and are, in effect, interim amendments.

Flight Standards Information Bulletins are issued to address a narrow topic and constitute amendments to Appendix 4 of the safety Handbooks. The bulletins have been used to convey, for example, NTSB or FAA safety recommendations that result from the findings of incidents or accidents. These bulletins generally have specified expiration dates ranging up to a year, but can be and often are extended. Inspectors are instructed in some cases to provide copies of these bulletins to air carriers, repair stations, and other operators.

Air Carrier Operations Bulletins are similar to information bulletins, but are contained in FAA Order 8430.17.³⁵ They convey information about special conditions pertaining to specific aircraft or operations that have a bearing on safety. Air carriers generally received copies of these bulletins. As of 1994, no more are to be issued, and further bulletin information is now provided through the Air Transportation Operations Inspector’s Handbook.

Notices are also guidance and are usually effective for one year before they expire automatically. Despite their expiration, they may contain valuable information that is still valid, but is not incorporated into permanent guidance materials. Lacking more permanent reference material, inspectors use expired notices for background data and reference.

³³ The FAA has issued several “Orders” dealing with various subjects, not limited to aviation safety. The FAA Orders discussed in this section are limited to those applicable to the tasks performed by Aviation Safety Inspectors. The term used in this section for these FAA Orders will be “**Handbooks.**”

³⁴ In addition, policy is not always reviewed by FAA Chief Counsel. It is possible, therefore, for policy to be issued that may conflict with legal interpretations.

³⁵ The counterpart for airworthiness is FAA Order 8340.1A, *Maintenance Bulletins*. Order 8340.1A was last reprinted in 1981 and the bulletin information is now provided through Handbook 8300.10.

Policy memoranda and policy letters are issued by the Director of Flight Standards, generally for national implementation. Memoranda are for the most part contemplated for intra-agency circulation only. Policy letters are intended for external dissemination.

Advisory Circulars are published by the agency primarily to provide guidance to those regulated by the FAA on acceptable means for complying with the FARs. The ACs generally address a particular issue where the agency perceives a need for further public information and advisory guidance. This information is also helpful to the safety inspector in resolving regulatory issues and advising air carriers and other companies within his or her surveillance purview. However, developing and publishing an AC is a lengthy process. Historically, ACs have taken between two to six years to issue, making some information obsolete by the time it is published.

Guidance Material Timeliness, Availability, and Accessibility

Inspectors and industry groups alike complain that published guidance is often dated; cumbersome to access; scattered across a number of handbooks, bulletins and policy memos; and very difficult to implement quickly and disseminate. In some cases, handbooks have been superseded by new documents without carrying forward valid, current guidance (example: 8300.9 and 8300.10).

The Handbook and Handbook Bulletins are revised and published in less time than ACs, which can take years. A Handbook change can be issued within six to eight months, and even less time is needed for a Handbook Bulletin, although distribution to the inspectors can take weeks. The Handbooks are not always available to the air carriers from the FAA except in “hard-copy” format. Only the Handbook Bulletins are routinely available to the air carriers via the Internet, “FedWorld,” and a bulletin board.³⁶

Much of the FAA’s guidance material is available through the FAANET database³⁷ (any FAA employee with authorization, issued in the form of a user identification number and password, can access this database by computer and modem). Handbooks are also accessible to inspectors—and the public—in other computer programs such as ATP Navigator and FAR Library, but these systems require updates to remain current.

Flight Standards established the Handbook Modernization Project team to study ways of implementing an electronic version of the three individual handbooks, as well as other documents including the FARs, via an “Intranet” to the field offices and the “Internet” for access by others. The OASIS is a newly developed system which provides timely information and portability. Although OASIS is in the early phases, the areas that have been developed are being field tested in nine FSDOs. This system will provide the inspectors with a “Field Kit” that includes all forms required to complete inspection activity, gather data, eliminate redundant entries, and transmit data to the FSAS for use by inspectors nationwide. Other elements of OASIS include Handbooks, Bulletins, automatic PTRS transfers, and Job Task Analysis worksheets to guide the inspectors through an inspection.

Consistency and Accuracy

At one time, the Handbooks were divided into three subjects: Certification, Maintenance, and General Practices and Procedures (FAA Orders 8310.4, 8320.7, and 8300.4, respectively). They are now divided along Flight Standards organizational lines and have grown apart such that even the chapter, page, and

³⁶ The Handbooks, FAR, and other aviation materials are also available to the public, as they are to FAA inspectors, from commercial software vendors, however, updates are necessary and are often delayed.

³⁷ The FAANET policy subsystem does not contain Order 8300.9, although parts of it remain valid guidance.

paragraph numbering format differs among the three Handbooks. More importantly, the process for developing and revising guidance within Flight Standards is segmented among headquarters divisions where each is responsible for a particular area of subject matter expertise and job function.

This segmentation leads to substantive inconsistencies among the various guidance materials where functions cross division lines but no inter-division coordination exists. Changes to the guidance material are likely to have an impact, not only on that particular Flight Standards Division, but on other offices as well. Both Flight Standards field personnel and industry have indicated that they do not have adequate input into the guidance development process before new materials are disseminated. Further complicating the process is the fact that the Aircraft Certification Service (AIR) also issues FAA Orders and guidance memoranda, which are used by Flight Standards inspectors in the field.³⁸

The fragmentation of the variety of guidance material makes it difficult to ensure that all pertinent materials are changed when a handbook or rule is amended. Consistency must be stressed beginning by using the FARs as a foundation and extending down to handbooks. Current inconsistencies and fragmentation of Handbook responsibilities inhibit the agency's ability to revise all documents related to a particular subject simultaneously. More importantly, since much of the direction provided to industry comes from FAA inspectors, any lack of consistency or conflict among inspector guidance materials creates the risk of different inspectors providing inconsistent direction to industry on the same topic or inconsistencies in direction by the same inspector on related topics covered by different guidance materials.

Terminology also needs to be made consistent through standardized definitions. For example, the terms "contractor," "vendor," and "supplier" are used interchangeably among different guidance materials. This leads to different interpretations among inspectors as to the scope of provisions containing these terms. Furthermore, industry may misunderstand direction when a term is inconsistent with previous direction using a different term. Clear definition of these related terms is particularly critical in an aviation environment characterized by multiple layers of outsourcing and subcontracting.

While inconsistencies across guidance materials create problems in policy interpretation, the Handbooks are the primary source of inspector guidance, and enhancement of their availability in their current applicable version would greatly benefit the inspectors. Handbooks are accessible to inspectors in several different computer programs offered by commercial software vendors, such as ATP Navigator and FAR Library. Having a single definitive electronic source for guidance material would eliminate consistency problems introduced by multiple sources that disseminate different versions of the material.

It should be understood that the issuance of guidance in and of itself is not sufficient to ensure that inspectors have the tools they need to function in today's increasingly complex environment. As new guidance is disseminated, inspectors need training to ensure uniform and consistent application.

ISSUE SUMMARY

- *Inspector Handbooks are divided along agency organizational lines and have grown apart such that there are substantive inconsistencies among the various guidance materials where functions cross division lines. Similar inconsistencies exist with related guidance materials that are developed outside of the Flight Standards organization.*

³⁸ AIR has issued FAA Order 8130.2C, *Airworthiness Certification of Aircraft and Related Products*; FAA Order 8100.7, *Aircraft Certification Systems Evaluation Program*; FAA Order 8120.2A, *Production Approval and Surveillance Procedures*; and various other orders that directly impact Flight Standards Inspectors.

- *Handbook revisions are not implemented simultaneously, leading to disjointed and inconsistent guidance in Handbooks, bulletins, ACs, and other guidance material. These inconsistencies result in an erosion of inspector confidence and a lack of standardization in policy interpretation by inspectors.*
- *Inspector training is inadequate to ensure uniform and consistent application of guidance material.*

RECOMMENDATIONS

Ensure consistency, timeliness, usefulness, and accessibility of guidance material provided to inspectors and air carriers.

- 5.A Streamline and consolidate current guidance to eliminate duplications and create a more concise and consistent publication system for inspectors and air carriers.**
- 5.B Improve accessibility of guidance materials through the use of automation by expediting the implementation of the Handbook Modernization Project.**
- 5.C Implement a policy to provide adequate training to inspectors on new guidance materials.**

PROPOSED IMPLEMENTATION STRATEGIES

Streamline and Consolidate Guidance Materials

To facilitate the accomplishment of inspectors' tasks, FAA should ensure guidance is more consistent, concise, and accessible. This can be accomplished by paring the varieties of guidance materials, removing redundancies and inconsistencies, standardizing the common tasks among the disciplines, and enhancing the timeliness of publication.

Timely publication of guidance material is as important to members of the industry as it is to inspectors. Consistency among guidance materials is likewise important, but due to the amount of time required for FAA to issue Advisory Circulars (ACs), inspector handbooks and ACs are often inconsistent, with ACs lagging behind in their publication. In some cases, ACs contain information that is obsolete by the time they are published. The disconnect between handbooks and ACs should be corrected to ensure that they are not in conflict. At the same time, it is important to ensure that industry has an opportunity to provide input on ACs through a public comment period.

Policy Review Team

Initially, a policy review team should be formed within AVR. Drawing from the disciplines of airworthiness, operations, certification, and rulemaking, the team would serve as a focal point to analyze new and modified policies, and to ensure consistency and timeliness of guidance materials. As an interim measure, the team would function somewhat as a resource center until the recommended Challenge 2000 initiative has been implemented. This team of AFS and AIR Aviation Safety Inspectors and engineers, a

management program analyst, automation support specialist, and attorney would review proposed guidance and policy changes to avoid duplication and inconsistencies or conflicts with regulatory requirements. After the issuance of the guidance or policy, this team would evaluate it for effectiveness and appropriateness and ensure that the guidance was incorporated into the appropriate documentation in a timely manner.

Inconsistencies and conflicts identified in guidance materials by the policy review team should be eliminated and the correct information should be consolidated into a more usable, accurate, and standardized format. For example, the guidance information contained in Order 8300.10, *Airworthiness Inspector's Handbook*, and Order 8400.10, *Air Transportation Operations Inspector's Handbook*, addresses several tasks shared by both disciplines. In many cases, however, this guidance is conflicting. The policy review team should conduct these consolidation tasks in conjunction with the assistance of the Handbook Modernization Project team.

Enhanced Accessibility Through Automation

The FAA should enhance the accessibility by air carriers, air agencies, inspectors, and other users to FAA Handbooks and other select guidance material, perhaps through on-line electronic media.

Handbook Modernization Project

Currently, AFS-300 is the project office for the Handbook Modernization Project. This Intranet/Internet on-line program and delivery system will allow digital access to the three primary Inspector Handbooks, including bulletins. This system allows the user to access the document's current version and virtually eliminates the need for distributing paper revisions. This same Intranet delivery solution will be used with the Internet to make selected handbooks and other documents available to the private sector.

Another advantage the HMP brings is a reduction of the time traditionally required to disseminate revised guidance information or expunge expired information. The HMP provides for instantaneous on-line updates. In addition, this program allows principal inspectors to send even lengthy documents rapidly via computer facsimile to their assigned air carriers and get a receipt of delivery. This program can be expanded to incorporate future documents as appropriate. Because the HMP is in the development stage, efforts should be made to accelerate delivery of this system. In the interim, FAA inspectors should encourage air carriers and air agencies to acquire FAA handbooks.

On-Line Aviation Safety Inspection System

The implementation schedule for OASIS should be accelerated. The overwhelming advantages of the current level of usability of OASIS far outweigh any disadvantages involved in waiting until the package is "perfect." The electronic document accessibility and portability of this product will enhance the agency's documentation management and inspection report generation. This could be accomplished as expeditiously as funding will allow for purchase and installation of the necessary equipment.

Inspector Training on Guidance Material

As updated, revised, or new guidance is distributed to the field, FAA should implement a policy to provide inspectors with adequate training to ensure uniform and consistent application to the industry. This training may be administered through briefings by supervisors, video presentations, or use of computer based instruction (CBI) for more complicated skills and issues. In some cases, providing inspectors the time to review new guidance may be sufficient.

ISSUE 6: INSPECTOR RESOURCES

BACKGROUND

Staffing Standards

Inspector staffing needs are determined by a staffing standard completed in FY 1993 and revised in FY 1995. The staffing standard is based on a task analysis in which each inspector job function is reviewed to identify the work elements in the task and to calculate the average number of work-hours needed to complete the task. Staffing requirements are calculated by analyzing environmental factors and work activities from various automated subsystems of the Aviation Safety Automation System. The standards are capable of projecting future staffing needs based on terminal area forecast data.

In 1988, support staffing standards were developed using standard work measurement techniques. The standards have not been updated since 1988, although support staff work has undergone substantial change since then. Offices have been modernized with high powered computers, local and wide area networks, and electronic mail. Support personnel now spend the majority of their time working with these electronic data processing tools. Two types of positions, local area network (LAN) administrators and aviation safety technicians³⁹, which did not exist in 1988, are counted as support staff.

The mathematical models used in the staffing standards do not easily allow for variations in the job tasks which make them up. This difficulty is due to the labor intensive nature of the methodologies used for data collection and the expense of the process. The Office of Business Information and Consultation estimates that revision of the staffing standards will require one year to complete and will cost an estimated \$ 1,500,000.⁴⁰

While FAA staffing standards adequately capture the inspector tasks and work processes built into them, industry practices are changing the nature of inspection work. New air carriers and low-cost air carriers are outsourcing maintenance and training to a greater degree. Industry practices are expected to continue to change in rapid and marked ways that will affect workload in the long-term and short-term. These new industry practices drive needed improvements in FAA certification, oversight, and surveillance processes. Some of these improvements are identified in this report. They include more rigorous initial certification and periodic fitness reviews of new air carriers using expert national teams, more discrete work assignments for principal inspectors who oversee new air carriers, and more systematic surveillance. These new approaches may also require inspectors with different skills than needed in the past, such as business, accounting, and statistical analysis. The existing staffing standards do not address these needs.

Additionally, the staffing standards do not reflect recent regulatory changes such as FAR Parts 119 and 142. These new rules, which became effective in January 1996 and August 1996, respectively, bring most commuter airlines under the same regulations governing major air carriers and create additional opportunities for air carriers to outsource flight crew member training. Some other activities and tasks performed by inspectors, but not currently accounted for in the staffing standards, are:

³⁹ An aviation safety technician (AST) is a person, other than an aviation safety inspector (ASI), who performs many of the routine tasks historically performed by ASIs. Some of these tasks are: renewing a flight instructor certificate based on the applicant completing a training course, issuing a pilot certificate based on a foreign pilot license, etc. The use of ASTs to perform these types of tasks allows the ASIs to perform additional safety related surveillance on aviation entities.

⁴⁰ ABC also needs to hire one additional staff member.

- expansion of NASIP and RASIP requirements;
- work performed by international field offices;
- work performed by domestic field offices on the International Aviation Safety Assessment program;
- performance of staff work and special projects due to reduction of headquarters' staff;
- industry factors such as carrier growth, cutbacks, mergers, and introduction of new technology;
- activities involving employee involvement and compliance with Executive Order 12871, *Labor - Management Partnership*, October 1, 1993;
- national certification team requirements, proposed in this report; and
- proposed methods to deal with workload "spikes" such as new applicants.

An analysis accomplished for this report indicates that existing deficiencies and projected needs amount to an estimated 528 inspector positions not currently included in the staffing standards. To adjust partially for these deficiencies, an allowance of 147 positions has been used in the budget formulation process to increase the number of inspector positions generated by the standards. This allowance provides for a portion of the inspectors assigned to the National Simulator Evaluation Team, the Aircraft Evaluation Groups, the Regulatory Support Division, and regional technical evaluation staffs.

As in the case of inspector staffing, support staff levels are below current needs. The standard indicates the need for 622 support employees by the end of FY 1996, compared to 470 projected to be on board. Consequently, inspectors must perform a variety of support tasks including preparing correspondence, filing, and data entry. While inspectors are performing support functions such as these, they cannot perform their safety inspection responsibilities.

In May, 1996, the Secretary of Transportation accelerated hiring 231 safety inspectors approved in the FY 1996 budget. FAA anticipates that the FY 1997 DOT Appropriations Act will include 154 additional inspector positions and 152 support positions. In FY 1998, FAA has requested 100 additional inspector positions. Despite these gains in overall employment, the analysis done for this report indicates a shortfall of 281 inspectors and 127 support personnel in FY 1998.

Regardless of its cause, under staffing is manifested in a variety of ways. It causes work assignments to accumulate in undesirable patterns such as the assignment of new applicants to inspectors who are already managing full workloads. Also, without needed resources, systemic improvements are difficult, if not impossible, to make. For example, recommendations in this report to improve initial certification of new applicants by employing a national certification team and to deal with "spikes" in FSDO workloads could add to existing staffing problems. In the long run, some of these problems may be offset by productivity gains brought about by targeted surveillance, improved training, and automation improvements such as OASIS. However, realizing long-term gains may not be possible if existing workload is not properly managed by meeting short-term staffing needs.

Staffing problems are exacerbated by inspector attrition, which is approximately 5.6 percent. This turnover has staffing impacts due to the time required to qualify an inspector. Inspectors require, on average, one and one half years to become qualified based on initial, specialized, and on-the-job (OJT) training requirements. Thus, an office may appear on paper to be completely staffed while, in reality, the work is performed only by inspectors who are fully qualified. As a result, these individuals are

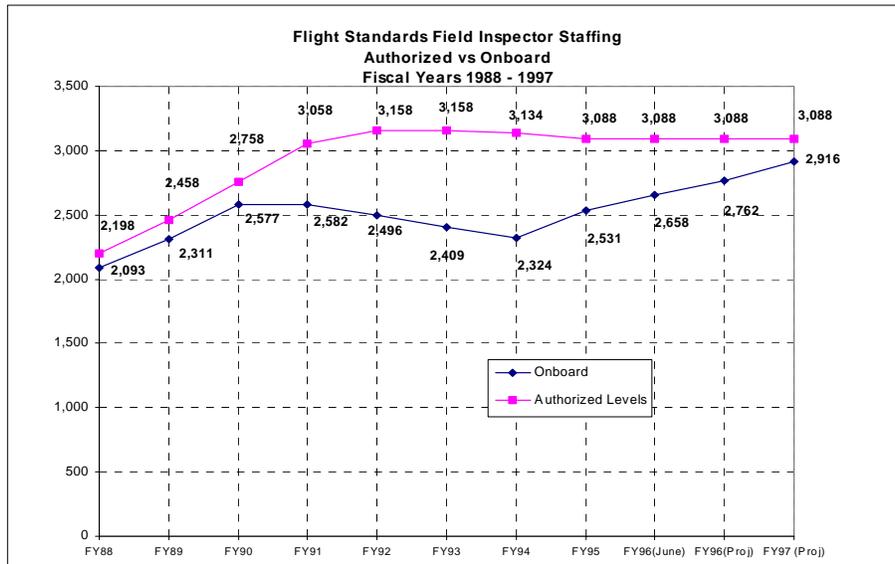
overburdened by the extra work and by the added responsibility of providing OJT to newly assigned inspectors. Consequently, offices continually fall behind in their workload.

Inspectors, managers, the GAO, NTSB, and many industry representatives interviewed for this report stated that in their experience Flight Standards lacks enough people to do its job. These anecdotal statements reinforce the consequences of an incomplete staffing standard and the need to develop a new staffing methodology which is more responsive to Flight Standards needs.

Impact of the Budget Process

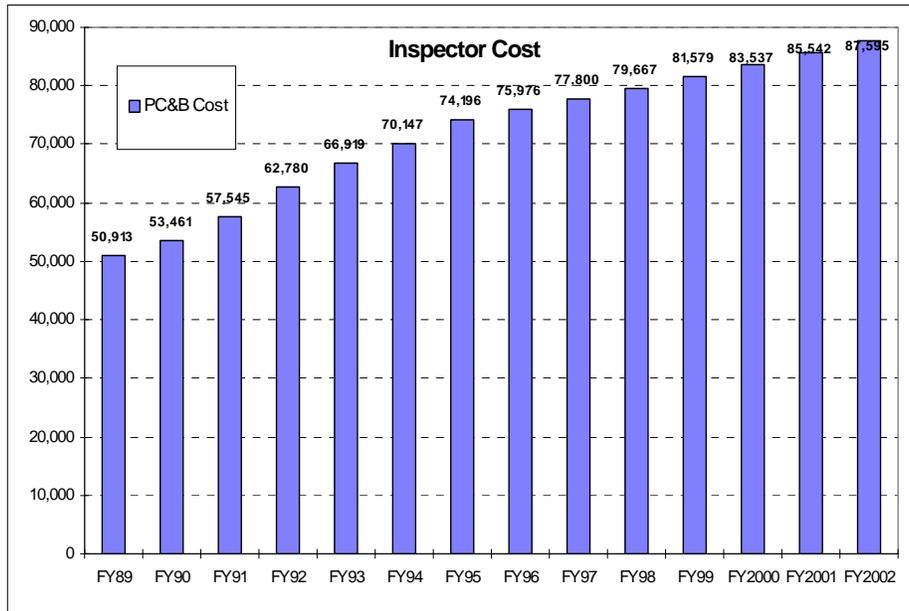
Until recent hiring began in FY 1995 and 1996, Flight Standards employment levels were below the number of positions authorized to be filled and below the numbers specifically called for by staffing standards plus the allowance referenced above. Inspector staffing decreased from FY 1991 to FY 1994 as illustrated in Figure 4. This decline was due to a variety of factors such as hiring freezes, continuously escalating personnel costs, and shortfalls in operational funds for training, travel, and equipment.

Figure 4: Flight Standards Field Inspector Staffing



Personnel compensation and benefits (PC&B) constitutes 87 percent of Flight Standards budget on average. These costs rise significantly each year (please see Figure 5). The total Flight Standards budget has not kept up with these and other costs. More importantly, the overall budget process with its lengthy formulation cycle and policy constraints has not permitted stabilized employment levels, as shown in Figure 4. Financial reform initiatives, currently endorsed by FAA, could alleviate these problems.

Figure 5: Inspector Cost



Staffing, Compensation, and Workload Distribution

Flight Standards staffing standards models were developed to predict national staffing requirements. They are designed to be used only as a guide, however, for making staffing resource decisions at the regional and field office level. The staffing standard cannot be applied at these lower levels without potentially significant and unpredictable inaccuracies being introduced. Field offices could be understaffed or over-staffed when their work programs do not fit the national norms. For example, an office that performs significantly more “on-demand”⁴¹ work than is accounted for in the staffing standard would not be able to hire a sufficient number of inspectors to perform all of the work required of it. Similarly, an office which must cope with the unanticipated workload caused by a rapidly growing new air carrier or a new air carrier with outsourcing or fleet mix issues is not accommodated by the staffing standard, and no other mechanism exists to identify a workload “spike” such as this. Human intervention is required to recognize and rectify these anomalies.

Additionally, the staffing standard models use workload drivers such as total numbers of aircraft operated and pilots in command. These drivers tend to generate greater staffing requirements for established operators versus new air applicants. For example, the staffing standards show a need for 30 non supervisory inspectors in the United Airlines CMO versus less than a full time work assignment for a basic team of three principal inspectors for most newly certificated air carriers within the first year of operation.

In the current Flight Standards management scheme, requests for additional resources are made by field office managers to regional Planning and Resource Committees (PRCs). These committees are comprised of field managers and regional staff. They meet periodically to review regional budget and staffing status, among other activities. They make decisions regarding requests to deviate from the literal dictates

⁴¹ Includes accident, incident, complaint, and enforcement investigations; airman certification; and assistance to the general public on a “walk-in” basis.

of the staffing standard at the field office level. Regional PRC committees function very effectively. They provided a process for management peers (and with increasing frequency, union officials) to be involved with critical resources decisions. Consequently, committee decisions are better received than similar decisions made unilaterally by the regional division manager or staff. National guidance gives regional PRCs authority to deviate from the staffing standards. However, regional PRC committees are not provided with specific guidelines on making these decisions. Guidance on the identification of unrealistic workload due to air carrier growth is not provided. Also, the authority to reduce workload by making more discrete work assignments to principal inspectors who are involved with rapidly growing air carriers is limited due to the position classification and compensation system used by Flight Standards.

Flight Standards uses a position classification guide to determine pay grades for safety inspectors. The version of this document in use today was last revised in 1980. A proposed revision was drafted in May 1996, but has not been implemented, pending union negotiations. The classification guide is designed to compensate employees based on the nature of their work assignments and their level of responsibility. Work assignments which are more technically complex bring higher compensation. The number of aircraft operated in an air carrier's fleet is also a complexity determinant. For example, using the complexity criteria in the guide, an inspector who works with turbojet aircraft is likely to be paid more than an inspector who works with piston powered aircraft. Similarly, a principal inspector on an air carrier will be paid more than an inspector performing general surveillance duties because, according to the guide, principal inspectors shoulder more responsibility.

Using these criteria, inspectors who are assigned to mature, established air carriers tend to be paid more than those assigned to new air carriers. This is so because the major airlines operate large fleets of different types of aircraft, which are generally turbine powered. New air carriers have historically operated small fleets of a single type of aircraft, particularly during the initial start-up phase. Consequently, these jobs are classified at lower pay levels, even though a new air carrier must maintain all of the same manuals, training programs, record systems, maintenance programs, and control systems that an established air carrier must have. Due to the higher pay levels generally associated with established air carriers, these jobs tend to attract the most senior and experienced people. New applicants tend to be assigned to inspectors at lower pay levels with less experience.

Additionally, the classification guide discourages dismantling overly complex work assignments because of potentially adverse consequences on an inspector's pay. It is not uncommon for some inspectors to be responsible for the oversight of several operators or repair stations as well as monitoring the activities of a large population of airmen, mechanics, and designees. For example, a typical principal maintenance inspector in a large FSDO may be responsible for as many as ten operators in addition to a large repair station employing more than 2,000 repairmen. Once an inspector's pay becomes fixed on the quantity and complexity of work assignments, then it becomes very difficult to reduce these assignments without having an adverse affect on the inspector's salary.

FAA Personnel Reform

In Section 347 of the 1996 Appropriations Act, Congress directed the FAA to develop and implement a new personnel management system that addresses the unique demands on the agency's work force. Under this law, FAA is exempt from the personnel management portions of Title 5 of the United States Code with a few noted exceptions.⁴² This legislation is designed to create personnel policies and procedures that work better and cost less and to place and train employees as quickly as possible. The new personnel system will draw from industry best practices to hold employees accountable to private

⁴² These exceptions include whistleblower protection; veterans' preference; limitations on the right to strike; antidiscrimination; employee suitability, security, and conduct; compensation for work injury; compensation for retirement and unemployment; and insurance coverage.

industry standards, increase flexibility, control and reduce personnel costs, enhance intellectual capital, create incentives for change, balance employees' personal and professional needs, and ensure fairness. FAA Personnel Reform could provide a great deal of the flexibility needed to improve Flight Standards' ability to hire and position its personnel resources more optimally.

Issues which should be explored include pay reform, including decentralized classification authority, and temporary employment provisions to alleviate short-term staffing needs. For example, a pay reform initiative could alleviate the limited, technical career path available within each inspector specialty. Although Flight Standards has a need for a wide variety of technical skill and expertise, few incentives exist to encourage field inspectors to broaden their expertise or to seek professional credentials. Consequently, many inspectors leave their technical careers in order to seek higher pay in management. Few incentives exist to encourage the most capable inspectors to seek the most challenging technical assignments.

Training

Flight Standards inspectors receive four categories of training. The categories are: initial training, on-the-job (OJT) training, continuing development training, and specialized training.

Initial training is provided by the FAA Academy as close to the time of entering on duty as possible. Initial training is tailored to job specialties for general aviation and air carrier inspectors according to their airworthiness or operations specialties. This training is referred to as "string training" because it is modular in nature with certain core courses provided to all employees. These generic courses cover generic government employee information, enforcement functions, accident investigation, and core job functions.

On-the-job training entails three levels. In Level I, inspector trainees review all reference material applicable to each job for which they are to receive training. In Level II, trainees observe and/or assist the assigned OJT instructor in the performance of a specific job task. During Level III, trainees perform the job task including PTRS input, under the supervision of an OJT instructor. After satisfactory completion of OJT, each inspector is certified by the OJT instructor.

Specialized training is provided to those inspectors whose job tasks dictate specific training. For example, aircraft type rating courses for pilots and composite materials training for maintenance inspectors are examples of specialized training. Currently, there are over 60 non-flight courses available such as digital technology, non destructive testing, aviation weather, and numerous aircraft system courses.

Flight Standards uses the agency's Operational Training Needs Assessment (OTNA) process to prioritize inspector training requirements. Flight Standards has developed profiles which identify training that is operationally essential (coded Priority 0) for key types of positions. Organizational enhancement training which is needed to enhance the organization's ability to respond to changes in workload or staffing is coded Priority 1. Priority 2 training is that which is needed to enhance the organization's ability to use or be knowledgeable of projected new technologies. In FY 1996, as a result of agency funding reallocation, Priority 0 training was provided to Flight Standard employees. However, Priority 1 and 2 training could not be provided.

Throughout the outreach segment of this 90-day Safety Review, employees, managers, and representatives from oversight agencies identified areas where training should be improved in quality or

frequency. These groups, along with representatives from industry, also provided anecdotes where training deficiencies were manifested in the quality of work.

ISSUE SUMMARY

- *Flight Standards staffing levels do not meet current requirements because: 1) Flight Standards' funding has not kept up with rising personnel costs; 2) staffing standards are incomplete; and 3) the shortfall in support staff requires inspectors to undertake non-technical tasks, which, in turn, prevents them from spending full time doing safety-related work.*
- *Inspector staff is not always deployed to ensure adequate oversight of new air carriers, particularly when these carriers are growing rapidly, because: 1) outdated position classification guides have led to uneven and unrealistic distribution of work and prevented reassignment of inspectors without causing potentially adverse affects on their pay; 2) regional decision makers lack guidance on how to provide flexibility in the application of staffing standards at the field office level; 3) the rigidity of the personnel system prevents assigning people where they are needed; and 4) the rigidity of the payroll system prevents quick adjustments in pay to provide an incentive to relocate.*
- *Agency training programs for Flight Standards employees do not always provide the frequency of training or meet the specific needs identified by employees, managers, and industry.*

RECOMMENDATIONS

Ensure that Flight Standards resources and training are adequate to meet safety requirements.

- 6.A** Devise a new Flight Standards staffing model which embraces the flexibility of FAA personnel reform and the National Performance Review. The new model should respond more timely to changes in workload and productivity and should express field office needs as a holistic requirement. As an interim measure, issue policy and guidelines on the authority of regions to adjust field office staffing based on “spikes” which occur due to operator growth and other unanticipated workload changes.
- 6.B** Pursue financial reform to provide a process that will permit Flight Standards funding to keep up with rising personnel costs. In the interim, while a new staffing model is under development, use the staffing analysis accomplished for this report to meet current requirements and for the purpose of budget formulation. Estimates are an additional 146 inspectors and 74 support staff over current plans for FY 1997, and 135 inspectors and 53 support personnel over current budget plans for FY 1998.
- 6.C** Begin an immediate initiative under FAA Personnel Reform, in concert with the overall Compensation Plan for the FAA, to design a new Flight Standards pay system. The new pay system should develop technical, professional, and managerial career tracks in accordance with Challenge 2000. As an interim measure, implement the FAA Position Classification Guide, Aviation Safety Inspector Positions (Air Carrier and General Aviation), and GS-1825 Series.

6.D Create a Challenge 2000 Training COE and place budget execution and program authority for Flight Standards technical training within the Regulation and Certification Line of Business.

PROPOSED IMPLEMENTATION STRATEGY

New Staffing Standards

The Office of Business Information and Consultation should initiate a project to design an integrated, holistic staffing standards model. This holistic process should explore a fundamentally different concept in that it could speak to a total field office staffing requirement. (Note: As is true today, the new standard would not apply at the district office level without interpretation.) It should provide needed flexibility to field managers to determine the best staffing mix (clerical, administrative, paratechnical, technical, etc.) necessary to meet the unique needs of the individual office.

The new staffing model needs to be based on a methodology which avoids rapid obsolescence due to continuously changing tasks and activities. A methodology which is results oriented or performance based should be explored. The model should take into account personnel changes envisioned by Challenge 2000. Necessary resources should be devoted to this task to preclude an overly long delivery schedule.

Hiring

The DOT Appropriations Bill currently before Congress contains funding for hiring 154 additional safety inspectors and 152 clerical and administrative personnel. The FY 1998 budget request contains an additional 100 inspector positions. Although the existing staffing standards accurately account for the tasks and process included in them, they are not complete for reasons stated previously. Therefore, in its budget formulation, FAA should use the analysis accomplished for this report to supplement the numbers of positions generated by existing staffing standards.

In reaching its FY 1997 hiring goals, Flight Standards should ensure that new employees possess required interpersonal communication skills and computer literacy in addition to the technical knowledge, skills, and abilities listed in the qualification standard. This could be accomplished by revising the *Flight Standards Service Aviation Safety Inspector Desk Guide*, which is used to interview job applicants and to check their references, and by amending the Aviation Safety Inspector Announcement to include questions on the applicant's interpersonal communications skills and computer expertise. These efforts should be initiated immediately and interim strategies should be explored so as not to delay FY 1997 hiring plans.

Interim Staffing Adjustments

The AFS should develop an interim policy to identify critical factors to ensure staffing is assigned whenever these critical factors are identified. The workload factors should also act as triggers for workload reassignment. If additional resources are needed outside the field office, they should be provided through consultation with the regional PRC.

New Pay System

The Associate Administrator for Regulation and Certification should begin an initiative to design a new Flight Standards pay system which investigates a technical, professional career track wherein inspectors may receive appropriate compensation to retain qualified inspectors. In this system, the full use of an inspector's skills will be encouraged. The system should provide recognition of individual expertise including relative value to the agency, and incentives to attain professional credentials. The new pay system should support highly qualified and experienced inspectors being assigned to new carriers. Under this new pay system, the current position classification guide could be eliminated. This system should be developed in consonance with the FAA Personnel Reform Compensation Committee.

Interim Classification Action

As an interim measure, the revised position classification guide and its associated software should be implemented. Regional offices should grade all positions according to the new classification guide. If the guide shows a position at a higher grade than it is presently assigned, the incumbent should be promoted. A Personnel Reform Information Bulletin (PRIB) should be formulated so that if the revised classification guide shows a position at a lower grade than it is presently assigned, the incumbent retains his or her present grade and pay (including increases) until a new pay system is implemented. This PRIB should provide the compensation flexibility needed to make work load adjustments. Until the PRIB is approved the provisions of the current pay and grade retention order must remain in effect.

Training Center of Excellence

The Associate Administrator for Regulation and Certification should establish a Training COE that takes advantage of current facilities and infrastructure support at the FAA Academy and the Transportation Safety Institute. This COE should provide the needed expertise to improve the technical training provided to Flight Standards Employees and should ensure coordination on management and executive training with FAA's Executive Steering Committee for Training and Development.

AVR will be taking control of its own training resources (funding and training personnel from the FAA Academy) in FY 1997 and FY 1998. Significant increases in AVR training funding are also expected from Congress in these time frames. This COE must have the ability to apply training expertise to decisions about technical training design, development and delivery for AVR employees.

CONCLUSION

The discussion of the six major issues identified in this report has been focused primarily on immediate and near term challenges facing the FAA in its regulation and certification mission. Other FAA planning efforts are addressing the longer term issues that will impact the FAA over the next several years. The recommendations developed in the current safety review have been coordinated to ensure that they are consistent with the Challenge 2000 report.

However, the recommendations made in this report do not, in and of themselves, constitute an integrated, long-term strategy. Rather, the recommendations are issue-specific actions that can be taken to improve safety, efficiency, and effective resource utilization in the near term. It is recommended that these actions will be implemented as interim steps to provide near-term benefits while longer-term solutions are part of an integrated strategy under development.

GLOSSARY

AC	Advisory Circular
AFS	Flight Standards Service
AIDS	Accident/Incident Data Subsystem
AIR	Aircraft Certification Service
ALPA	Air Line Pilots Association
AVR	Regulations and Certification Organization
CAIS	Comprehensive Airman Information Subsystem
CFR	Code of Federal Regulations
CHDO	Certificate Holding District Office
CMO	Certificate Management Office
COE	Center of Excellence
DOT	Department of Transportation
EIS	Enforcement Information Subsystem
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FOQA	Flight Operations Quality Assurance
FSAS	Flight Standards Automation System
FSDO	Flight Standards District Office
GAIN	Global Analysis and Information Network
GAO	General Accounting Office
HMP	Handbook Modernization Project
ISIS	Integrated Safety Information System
LAN	Local Area Network
NASDAC	National Aviation Safety Data Analysis Center
NASIP	National Aviation Safety Inspection Program
NPG	National Flight Standards Work Program Guidelines
NPRM	Notice of Proposed Rulemaking
NTSB	National Transportation Safety Board
OASIS	On-line Aviation Safety Information System
OIG	Office of the Inspector General
OJT	On-the-job Training
OPSS	Operations Specifications Subsystem
OST	Office of the Secretary of Transportation
OTNA	Operational Training Needs Assessment
PAI	Principal Avionics Inspector
PASI	Preapplication Statement of Intent
PC&B	Personnel, Compensation & Benefits
PMI	Principal Maintenance Inspector
POI	Principal Operations Inspector
PQMI	Process Quality Management and Improvement
PRC	Planning Resource Committee
PTRS	Program Tracking and Reporting Subsystem
RASIP	Regional Aviation Safety Inspection Program
SDR	Service Difficulty Reporting Subsystem
SFAR	Special Federal Aviation Regulation

SPAS
U.S.C.

Safety Performance Analysis System
United States Code

APPENDIX A – TEAM MEMBER LIST

EXECUTIVE STEERING COMMITTEE

Chair: Linda Hall Daschle, Deputy Administrator, FAA
Project Director: Jacqueline Blazy, Air Traffic Services, FAA

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Marty Bollinger, Booz, Allen & Hamilton
Nicholas Garaufis, Chief Counsel, FAA
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David Gilliom, Manager, Flight Standards Division, Western Pacific Region, FAA
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Jack Johnson, President, Professional Airways Systems Specialists (PASS)
Frank E. Kruesi, Assistant Secretary for Transportation Policy, DOT
Louise Maillet, Acting Assistant Administrator for Policy, Planning, and International Aviation, FAA
Nancy McFadden, General Counsel, DOT
Ed Verburg, Associate Administrator for Administration, FAA
The Honorable Carl Vogt, Former NTSB Chairman

TASK FORCE MEMBERS

CORE MEMBERS

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Terry Gordon, Assistant Manager, Juneau FSDO, FAA
Warren Hall, Principal Airworthiness Inspector, AGC FSDO, FAA
John Hallinan, Manager, Anchorage FSDO, FAA
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John Lauber, Vice President, Corporate Safety and Compliance, Delta Airlines
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Eric Lenz, Aviation Safety Inspector, San Francisco CMO, FAA
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Capt. J. Randolph Babbitt, President, Airline Pilots Association, International
Andy Cebula, Vice President, National Air Transportation Association, Inc.
Robert Crandall, Chairman/CEO American Airlines, Inc.
Raymond J. DeCarli, Assistant Inspector General for Auditing, DOT
Edward J. Driscoll, President/CEO, National Air Carriers Association
Chester Ekstrand, Vice President, Government Technical Liaison, Boeing Corp.
Frank Fine, President/CEO, Fine Airlines, Inc.
Don Fuqua, President, Aerospace Industries Association of America
John Gaughan, American Pilots Association
Richard Godmanson, Executive Vice President, America West Airlines, Inc.
Gerald Greenwald, Chairman/CEO, United Airlines
Carol B. Hallet, President, Air Transport Association of America
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Dr. James Hauser, President, Aero Spectra Corporation
Owen Hermstadt, Counsel for Machinists Union
Frank L. Jensen, Jr., President, Helicopter Association International
David Kirstein, Baker and Hostetler Law Firm
John Olcott, President, National Business Aircraft Association, Inc.
Sara Shea, Hogan and Hartson Law Firm
Frederick Smith, Chairman/President/CEO, Federal Express Corporation
Diane Shapiro, Director of Flight Operations, McDonnell-Douglas
Jim Sovich, President, Allied Pilots Association
Edward Stimpson, President, General Aviation Manufacturers Association
Stephen Wolf, Chairman/CEO, USAir, Inc.

LIST OF ORGANIZATIONS CONTACTED

Aeronautical Repair Station Association	Custom Air Transport, Inc.
Aerospace Industries Association of America	Delta Air Lines, Inc.
Air Line Dispatchers Federal	DHL Airways, Inc.
Air Line Pilots Association	Emery Worldwide Airlines, Inc.
Air Transport Association of America	Federal Express Corporation
Aircraft Electronics Association	Fine Airlines, Inc.
Allied Pilots Association	Flight Safety Foundation, Inc.
America West Airlines, Inc.	General Aviation Manufacturers Assoc.
American Airlines, Inc.	Helicopter Association International
American Helicopter Society	McDonnell Douglas
Atlas Air, Inc.	National Air Carriers Association
Aviation Distributors and Manufacturers	National Air Transportation Assoc., Inc.
Boeing Co.	National Business Aircraft Association
Buffalo Airways, Inc.	National Transportation Safety Board
Capital Cargo International Airline	Northwest Airlines, Inc.
Continental Air Lines, Inc.	Peninsula Airways, Inc.
Continental Micronesia, Inc.	Piedmont Airlines, Inc.

Piedmont Aviation Services, Inc.
Professional Airways Systems Specialists
Professional Aviation Maintenance Association
Regional Airline Association
Rhoades Aviation, Inc.
Southwest Airlines, Co.
Southwest Pilots Association
Trans World Airlines
Transworld Express
United Air Lines, Inc.
United Parcel Service Co.
U.S. Department of Transportation, Office of the
Inspector General
U.S. General Accounting Office
USAir, Inc.
Wings West/American Eagle Airlines, Inc.

APPENDIX C – REFERENCES TO REGULATIONS

FAA AND OST REGULATORY SCHEME

CERTIFICATION

Title 49 Section 41102 of the United States Code (49 U.S.C. §41102)¹ provides in part that the Secretary of Transportation may issue a certificate or a temporary certificate of public convenience and necessity to provide air transportation as an air carrier after the Secretary finds that the applicant is fit, willing, and able to provide the transportation to be authorized by the certificate and to comply with the statute and the regulations of the Secretary. To carry out the provisions of §41102, the Secretary adopted rules prescribing standards, requirements, and the procedures an applicant must meet prior to the issuance of a certificate. Part 204 (14 CFR Part 204), *Data to Support Fitness Determinations*, contains rules on the fitness data that must be submitted by applicants for economic authority as a U.S. air carrier and by air carriers proposing a substantial change in operations, ownership, or management.

Title 49 §44705 of the United States Code (49 U.S.C. §44705) provides in part that the Administrator of the Federal Aviation Administration shall issue an air carrier operating certificate when the Administrator finds after investigation that the applicant is properly and adequately equipped and able to operate safely under this part and regulations and standards prescribed under this part. Section 44705 also provides that an air carrier operating certificate shall, among other things, contain terms necessary to ensure safety in air transportation. To carry out the provisions of §44705, the Administrator adopted rules prescribing standards, requirements, and the procedures an applicant must meet prior to the issuance of a certificate. Part 119 (14 CFR §119)², *Certification: Air Carriers and Commercial Operators*, contains the rules for certification and operation of air carriers under Parts 121. Part 121 (14 CFR §121) *Operating Requirements: Domestic, Flag, and Supplemental Operations*, contains rules governing the domestic, flag, and supplemental operations of Part 121 air carrier certificate holders and each person or company employed or used by a certificate holder conducting operations under this part, including maintenance, preventive maintenance and alteration of aircraft, and training of air and ground crew personnel. Part 145 (14 CFR Part 145), *Repair Stations*, contains rules for issuing repair station certificates as well as general operating rules for Part 145 repair stations. Part 43 (14 CFR Part 43) *Maintenance, Preventive Maintenance, Rebuilding and Alteration*, contains rules on maintenance of aircraft, airframes, engines, and component part in general, including maintenance of Part 121 aircraft, airframes, engines, and component parts. Part 142 (14 CFR Part 142) *Training Centers*, contains rules governing the certification and operation of aviation training centers that will use aircraft, flight simulators, and flight training devices for pilot training, testing, and checking.

OUTSOURCING

Under Part 145 (14 CFR Part 145) a certificated Part 121 air carrier may also be certificated as a Part 145 repair station. Under Part 121, a certificated Part 121 air carrier may contract out (outsource) its maintenance and maintenance services to another Part 121 air carrier, to a Part 145 repair station, or to a

¹ The Federal Aviation Act of 1958, as amended, was recodified as subtitles II, III, V-X of Title 49 of the United States Code, "Transportation."

² Part 119 also contains the rules for certification and operation of air carriers under Parts 125 and 135. [NOTE: Part 119 became effective January 19, 1996, for applicants and for air carriers licensed after that date. For previously authorized air carriers, there is a transition period of applicability until March 20, 1997, when the rules will apply to all air carriers.]

Part 43 maintenance provider. However, the regulatory scheme provides that the Part 121 air carrier that makes arrangements with another entity for the performance of any maintenance, preventive maintenance, or alternations is not relieved of the primary responsibility for compliance in the performance of that work (14 CFR §121.363(b)).

Although Parts 145 and 43 contain an independent requirement that maintenance performed for a Part 121 certificated air carrier under these parts must be performed in accordance with the air carrier's manual and Part 121 regulations, all subsections of Part 121 that permit outsourcing (see attached Regulatory Scheme Chart and Guidance) provide specifically or by inference that the Part 121 air carrier is ultimately responsible, whether the contract work relates to maintenance or maintenance-related training.

Similarly, SFAR-58 (14 CFR SFAR-58) and new Part 142 (14 CFR Part 142) assign all responsibility for compliance with Part 121 flight crew training to the Part 121 air carrier for whom the training is conducted. Section 121.401, *Training Program: General*, requires air carriers to “establish, obtain the appropriate approval of, and provide a training program that meets the requirements of [Part 121 and Appendixes E and F].” Part 142 provides an alternative means to accomplish the approved training required by §121.401 by allowing the air carrier to contract with a Part 142 Training Center to carry out its training program. Section 121.401 requires that the air carrier approved training program “ensure that each crew member, aircraft dispatcher, flight instructor and check airman” is adequately trained to perform his assigned duties. It also requires that the air carrier “provide adequate ground and flight training facilities and properly qualified ground instructors for the training....” No distinction is made in Part 121 or Part 142 between the training performed in-house by the air carrier and training performed by a Part 142 training center.

Finally, Parts 121 SFAR-58, 145, 142, and Part 43, do not distinguish between the responsibility of the Part 121 certificated air carrier when maintenance, repairs, rebuilding, and ground crew and flight crew training are conducted in-house and when this work is outsourced to another Part 121 certificated carrier with or without Part 145 authority, to a Part 142 training center, or to a Part 43 certificated person.

REGULATORY SCHEME CHART

The following regulations pertaining to CERTIFICATION, MAINTENANCE, and TRAINING requirements are referenced in this chart.		
PART	TITLE	APPLICABILITY
43	Maintenance, Preventive Maintenance, Rebuilding and Alteration	Contains rules on maintenance of aircraft, airframes, engines, and component parts.
119	Certification: Air Carriers and Commercial Operators	Contains the rules for certification and operation of air carriers under Parts 121, 125, and 135. [NOTE: Part 119 became effective January 19, 1996, for applicants and for air carriers licensed after that date. For previously authorized air carriers, there is a transition period of applicability until on March 20, 1997, when the rules will apply to all air carriers.]
121	Operating Requirements: Domestic, Flag, and Supplemental Operations	Contains rules governing the domestic, flag, and supplemental operations of each person who holds or is required to hold an Air Carrier Certificate; and each person employed or used by a certificate holder conducting operations under this part, including maintenance, preventive maintenance and alteration of aircraft.
SFAR-58	Special Federal Aviation Regulation	Provides for approval of an alternate method (known as "Advanced Qualification Program" or "AQP") for qualifying, training, certifying, and otherwise ensuring competency of crew members, aircraft dispatchers, other operations personnel, instructors, and evaluators who are required to be trained or qualified under Part 121.
142	Training Centers	Contains rules governing the certification and operation of aviation training centers that will use aircraft flight and flight training devices for pilot training, testing, and checking tasks. It adopts most of the requirements of SFAR-58.
145	Repair Stations	Contains rules for issuing repair station certificates as well as general operating rules.

The following regulations pertaining to **CERTIFICATION, MAINTENANCE, and TRAINING** requirements are referenced in this chart.

PART	TITLE	APPLICABILITY
204	Data to Support Fitness Determinations	Contains rules on the fitness data that must be submitted by applicants for economic authority as a U.S. air carrier, and by air carriers proposing a substantial change in operations, ownership or management.

CERTIFICATION—Continuing Requirements

PART	TITLE	GUIDANCE
204.3 (OST)	<p>§204.3 states that an applicant to OST for a type of certificate authority it does not currently hold shall file the data set forth in paragraphs (a) through (v) of this section in support of its “fitness” to operate. The Department may also require an applicant to provide additional data to reach informed judgment about its fitness.</p> <p>§204.3(f) requires an applicant to identify the “key personnel” who will be employed by the applicant including: (2) the experience, expertise, and responsibilities of each. §204.2(k) defines “key personnel” as the members of the board of directors, president, chief executive officer, chief operating officer, all vice presidents, the directors or supervisors of operations, maintenance, and finance, and the chief pilot, as well as any part-time or full-time advisors or consultants.</p> <p>§204.3(n) requires an applicant to include a description of its fleet of aircraft including--(1) the number of each type of aircraft owned, and to be purchased, or leased; and (2) the applicant’s plans, including financing plans, for the purchase or lease of additional aircraft.</p> <p>§204.3(t) requires a description of the service to be operated if the application is granted including: (2) a forecast Income Statement, broken down by quarters, for the first year ending after the initially proposed operations are normalized, and an itemization of all pre-operating and start-up costs associated with the initiation of the proposed service. Such statements shall also include an explanation of how the estimated costs and revenues were developed, a description of the manner in which costs and revenues were allocated, how the underlying traffic forecasts were made, and what load factor has been assumed for the average and peak month. Pre-operating and start-up expenses should include the costs of obtaining the necessary government approvals; establishing stations; introductory advertising, aircraft, equipment and space facility deposits and rent; training; and salaries earned prior to start-up.</p>	Information Packet on How to Become a Certificated Air Carrier distributed by OST.
121.1 (FAA)	§121.1 states that this part prescribes rules	Handbook Bulletin HBAT 95-

CERTIFICATION—Continuing Requirements

PART	TITLE	GUIDANCE
	<p>governing--(a) the domestic, flag, and supplemental operations of each person who holds or is required to hold an Air Carrier Certificate;</p> <p>(b) Each person employed or used by a certificate holder conducting operations under this part, including maintenance, preventive maintenance and alteration of aircraft;</p> <p>(c) Each person who applies for provisional approval of an Advanced Qualification Program (AQP) curriculum under SFAR-58, and each person employed or used by an air carrier to perform training, qualification, or evaluation functions under an AQP.</p>	<p>14 provides guidance related to flight crew training.</p>
119.33	<p>§119.33 states that no person may operate as a direct air carrier unless that person is (a) a U.S. citizen, (b) obtains an Air Carrier Certificate, and (c) obtains operations specifications.</p>	<p>FAA Order 8400.10.</p>
119.35	<p>§119.35(a) states that any person applying for an Air Carrier Certificate must submit an application (1) in a form and manner prescribed by the Administrator; and (2) containing any information the Administrator requires.</p> <p>§119.3(b) states that each application must be submitted at least 90 days before the date of intended operation.</p>	<p>FAA Order 8400.10, Handbook Bulletin 96-01.</p>
119.39	<p>§119.39(a) states that an applicant may be issued an Air Carrier Certificate if the applicant (1) meets the applicable requirements of this part; (2) holds applicable economic authority from the Department of Transportation [OST], and (3) is properly and adequately equipped and is able to conduct a safe operation under Part 121 and operations specifications issued under this part.</p> <p>§119.39(b) states that an application may be denied if (1) the applicant is not properly or adequately equipped or is not able to conduct safe operations under this part; (2) the applicant previously held an Air Carrier Certificate which was revoked; (3) the applicant intends to fill a key management position listed in §119.65 with an individual who exercised control over or who held the same or a similar position with a certificate holder whose certificate</p>	<p>Preamble to new Part 119.</p>

CERTIFICATION—Continuing Requirements

PART	TITLE	GUIDANCE
	<p>was or is in the process of being revoked; or (4) an individual who will have control over or have a substantial ownership interest in the applicant had the same or similar control or interest in a certificate holder whose certificate was or is in the process of being revoked.</p>	
<p>121.59 [see also 119.65]</p>	<p>§121.59(a) states that each applicant for a certificate under this part must show that it has enough qualified management personnel to provide the highest degree of safety in its operations and that those personnel are employed on a full-time basis in the following or equivalent positions [Qualifications for these positions are set forth in §121.61]:</p> <p>(1) General manager, (2) Director of operations (who may be the general manager if qualified), (3) Director of maintenance, (4) Chief pilot,(5) Chief inspector.</p> <p>§121.59(b) states that <i>supplemental</i> air carriers may be authorized to have different positions or numbers of positions than those listed in paragraph (a) for a particular operation if the air carrier shows that it can perform the operation with the highest degree of safety under the direction of fewer or different categories of management personnel due to--(1) the kind of operation involved; (2) the number and type of aircraft used; and (3) the area of operations.</p> <p>§121.59(c) states that each <i>supplemental</i> air carrier shall--</p> <p>(1) set forth the duties, responsibilities, and authority, of the personnel required by this section, in the general policy section of the air carrier manual; (2) list in the manual the names and addresses of the persons assigned to those positions; and (3) within at least 10 days, notify the FAA Flight Standards District Office charged with the overall inspection of the air carrier of any change made in the assignment of persons to the listed positions.</p>	<p>Preamble to new Part 119.</p>

CERTIFICATION—Continuing Requirements

PART	TITLE	GUIDANCE
<p>119.41 [eff. 1/19/96 for new carriers; 3/20/97 for existing carriers, replaces 121.77]</p>	<p>§119.41(a) states that the Administrator may amend any certificate issued under this part if--(1) the Administrator determines that safety in air commerce and the public interest requires the amendment; or (2) the certificate holder applies for the amendment and the certificate-holding district office determines that safety in air commerce and the public interest allows the amendment.</p> <p>(c) When the certificate holder applies for an amendment of its certificate, the following procedure applies: (1) the certificate holder must file an application to amend its certificate with the certificate-holding district office at least 15 days before the date proposed by the applicant for the amendment to become effective, unless the administrator approves filing within a shorter period; and (2) the application must be submitted in the form and manner prescribed by the Administrator.</p>	<p>Existing Policy: FAA Statement on Inspection Policy, Personnel; AFS-1 Policy Memorandum; Handbook Bulletin for Airworthiness # 95-06A; AC 120-16C; AC 120-49; Order 8000 49B; Order 8300.10 (Vol. 2, Chap 40, 64, 65, 67, 69; 70, 84, 95, 221; Vol. 3, Chap 37, 45, 131); Policy Memorandum #54; Order 8400.10 CHG 1, Section 2.</p>
<p>119.51 [eff. 1/19/96 for new carriers; 3/20/97 for existing carriers, replaces 121.79]</p>	<p>§119.51(a) states that the Administrator may amend any operations specifications issued under this part if--(1) the Administrator determines that safety in air commerce and the public interest require the amendment; or (2) the certificate holder applies for the amendment, and the Administrator determines that safety in air commerce and the public interest allows the amendment.</p> <p>(b) Except as provided in paragraph (e) of this section, when the Administrator initiates an amendment to a certificate holder's operations specifications, the following procedure applies: (1) the certificate-holding district office notifies the certificate holder in writing of the proposed amendment. (2) the certificate-holding district office sets a reasonable period (but not less than 7 days) within which the certificate holder may submit written information, views, and arguments on the amendment.</p>	<p>Existing Policy: FAA Statement on Inspection Policy, Personnel; AFS-1 Policy Memorandum; Handbook Bulletin for Airworthiness # 95-06A; AC 120-16C; AC 120-49; Order 8000 49B; Order 8300.10 (Vol. 2, Chap 40, 64, 65, 67, 69; 70, 84, 95, 221; Vol. 3, Chap 37, 45, 131); Policy Memorandum #54; Order 8400.10 CHG 1, Section 2.</p>

CERTIFICATION—Continuing Requirements

PART	TITLE	GUIDANCE
204.5	<p>§204.5(a) states that a certificated air carrier proposing a “substantial change” in operation, ownership or management shall file with OST the data set forth in §204.3.</p> <p>§204.2(n) defines “substantial change” as including (1) changes in operations from charter to scheduled service, cargo to passenger service, short-haul to long-haul service, or small-aircraft to large-aircraft operations; (2) the filing of a bankruptcy petition; (3) the acquisition by a new shareholder or the accumulation by an existing shareholder of 10% or more of the voting stock; and (4) a change in the president, CEO or COO and/or a change in at least half of the other key personnel within any 12-month period or since its latest fitness review, whichever is more recent.</p>	Information Packet on How to Become a Certificated Air Carrier distributed by OST.
204.7	<p>§204.7(a) states that any air carrier that has been found fit and does not commence operations within one-year of the date of its fitness determination is deemed no longer to be fit, and its authority shall be revoked for reason of dormancy.</p> <p>§204.7(b) states that any air carrier found fit which commences operations within one year after being found fit but then ceases operation, shall not resume operations without first filing all of the data required by §204.3 and being redetermined fit to provide its proposed service.</p>	Information Packet on How to Become a Certificated Air Carrier distributed by OST.

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
121.105	<p>§121.105 states that each certificate holder conducting domestic or flag operations must show that competent personnel and adequate facilities and equipment (including spare parts, supplies, and materials) are available at such points along the certificate holder’s route as are necessary for the proper servicing, maintenance, and preventive maintenance of airplanes and auxiliary equipment.</p>	<p>FAA Order 8300.10 (Vol 2, Chap 62, 64, 69, 72, 73).</p>
121.123	<p>§121.123 states that each <u>supplemental</u> air carrier must show that competent personnel and adequate facilities and equipment (including spare parts, supplies, and materials) are available for the proper servicing, maintenance, and preventive maintenance of aircraft and auxiliary equipment.</p>	<p>Existing Policy: FAA Statement on Inspection Policy, Personnel; AFS-1 Policy Memorandum; Airworthiness Handbook Bulletin 92-08; FAA Order 8300.10; Information Bulletin For Airworthiness 95-13; AC 120-16C; AC 120-49; Order 8300.10 (Vol. 2, Chap. 64, 69, 70, 84; Vol. 3, Chap. 37).</p>
121.135	<p>§121.135(a) states that each manual must include--</p> <p>(16) Instructions and procedures for maintenance, preventive maintenance, and servicing. (19) Airworthiness inspections, including instructions covering procedures, standards, responsibilities, and authority of inspection personnel. (24) Other information or instructions relating to safety.</p> <p>§121.135 (c) states that each certificate holder shall maintain at least one complete copy of the manual at its principal operations base.</p>	<p>Existing Policy: FAA Statement on Inspection Policy, Personnel; AFS-1 Policy Memorandum; AC 120-16C; Order 8300.10 (Vol. 2, Chap. 64; Vol. 3, Chap. 37, 131).</p>
121.137	<p>§121.137(a) states that each certificate holder shall furnish copies of the manual required by §121.133 (and the changes and additions thereto) or appropriate parts of the manual to--(1) its appropriate ground operations and maintenance personnel; (2) crew members; and (3) representatives of the Administrator assigned to it.</p> <p>§121.137(b) states that each person to whom a manual or appropriate parts of it are furnished under paragraph (a) shall keep it up-to-date with the changes and additions furnished to that person and shall have the manual or appropriate parts of it accessible when performing assigned duties.</p>	<p>Existing Policy: FAA Statement on Inspection Policy, Personnel; AFS-1 Policy Memorandum; Handbook Bulletin for Airworthiness 95-06A; AC 120-16C; Order 8300.10, Order 8300.10 (Vol. 2, Chap. 64, 69, 221; Vol. 3, Chap. 37, 131).</p>

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
121.139	§121.139(a) states that each <u>supplemental</u> air carrier shall carry appropriate parts of its manual on each aircraft when away from the principal base for use of ground or flight personnel.	
121.361	§121.361(b) requires each certificate holder who uses parts maintained, altered or inspected by persons employed outside of the U.S. who do not hold U.S. airman certificates to provide for surveillance of facilities and practices to assure that all work performed on these parts is accomplished in accordance with the certificate holder's manual.	
121.363	<p>§121.363(a) states that each certificate holder is primarily responsible for--(1) the airworthiness of its aircraft, including airframes, aircraft engines, propellers, appliances, and parts thereof; and (2) the performance of the maintenance, preventive maintenance, alternation of its aircraft, including airframes, aircraft engines, propellers, appliances, emergency equipment, and parts thereof, in accordance with its manual and the regulations of this chapter.</p> <p>(b) A certificate holder may make arrangements with another person for the performance of any maintenance, preventive maintenance, or alternations. However, this does not relieve the certificate holder of the responsibility specified in paragraph (a) of this section.</p>	Existing Policy: FAA Statement on Inspection Policy, Personnel; Handbook Bulletin for Airworthiness 95-06A; Information Bulletin For Airworthiness 95-13; AC 120-16C; Order 8000.49B; Order 8300.10 (Vol. 2, Chap. 64, 69, 84, 221; Vol. 3, Chap. 37, 131).
121.367	<p>§121.367 states that each certificate holder shall have an inspection program and a program covering other maintenance, preventive maintenance, and alterations that ensures that:</p> <p>(a) Maintenance, preventive maintenance, and alterations performed by it, or by other persons, are performed in accordance with the certificate holder's manual;</p> <p>(b) Competent personnel and adequate facilities and equipment are provided for the proper performance of maintenance, preventive maintenance, and alterations; and</p> <p>(c) Each aircraft released to service is airworthy and has been properly maintained for operation under this part.</p>	Existing Policy: FAA Statement on Inspection Policy, Personnel; Handbook Bulletin for Airworthiness 95-06A; Information Bulletin For Airworthiness 95-13; AC 120-16C; Order 8300.10 (Vol. 2, Chap. 64, 69, 70, 221).

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
121.369	<p>§121.369(a) states that the certificate holder shall put in its manual a chart or description of the certificate holder's organization required by §121.365 and a list of persons with whom it has arranged for the performance of any of its required inspections, other maintenance, preventive maintenance, or alterations, including a general description of that work.</p> <p>(b) The certificate holder's manual must contain the programs required by §121.367 that must be followed in performing maintenance, preventive maintenance, and alterations of that certificate holder's airplanes, including airframes, aircraft engines, propellers, appliances, emergency equipment, and parts thereof, and must include at least the following: (1) The method of performing routine and non-routine maintenance (other than required inspections), preventive maintenance, and alterations. (2) A designation of the items of maintenance and alteration that must be inspected (required inspections), including at least those that could result in a failure, malfunction, or defect endangering the safe operation of the aircraft, if not performed properly or if improper parts or materials are used. (3) The method of performing required inspections and a designation by occupational title of personnel authorized to perform each required inspection. (4) Procedures for the reinspection of work performed pursuant to previous required inspection findings.(5) Procedures, standards, and limits necessary for required inspections and acceptance or rejection of the items required to be inspected and for periodic inspection and calibration of precision tools, measuring devices, and test equipment. (6) Procedures to ensure that all required inspections are performed. (7) Instructions to prevent any person who performs any item of work from performing any required inspection of that work. (8) Instructions and procedures to prevent any decision of an inspector, regarding any required inspection from being countermanded by persons other than supervisory personnel of the inspection unit, or a person at that level of administrative control that has overall responsibility for the management of both the required inspection functions and the other maintenance, preventive maintenance, and alterations functions. (9) Procedures to ensure that required inspections, other maintenance, preventive maintenance, and alterations that are not completed as a result of shift changes or similar work interruptions are properly completed before the aircraft is released to</p>	Existing Policy: FAA Statement on Inspection Policy, Personnel; AFS-1 Policy Memorandum; AC 120-16C; Order 8300.10 (Vol. 2, Chap. 64, 69, 221).

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
	<p>service.</p> <p>(c) The certificate holder must set forth in its manual a suitable system (which may include a coded system) that provides for preservation and retrieval of information in a manner acceptable to the Administrator and that provides: (1) A description (or reference to data acceptable to the Administrator) of the work performed; (2) The name of the person performing the work if the work is performed by a person outside the organization of the certificate holder; and (3) The name or other positive identification of the individual approving the work.</p>	
121.373	<p>§121.373(a) states that each certificate holder shall establish and maintain a system for the continuing analysis and surveillance of the performance and effectiveness of its inspection program and the program covering other maintenance, preventive maintenance, and alterations and for the correction of any deficiency in those programs, regardless of whether those programs are carried out by the certificate holder or by another person.</p>	<p>Existing Policy: Order 8300.10 (Vol. 3, Chap 37).</p>
121.380	<p>§121.380(a) states that each certificate holder shall keep the following records: (1) All the records necessary to show that all requirements for the issuance of an airworthiness release under §121.709 have been met. (2) Records containing the following information: (i) the total time in service of the airframe; (ii) Except as provided in paragraph (b), the total time in service of each engine and propeller; (iii) the current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance; (iv) the time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis; (v) the identification of the current inspection status of the aircraft, including the times since the last inspections required by the inspection program under which the aircraft and its appliances are maintained; (vi) the current status of applicable airworthiness directives, including the date and methods of compliance, and, if the airworthiness directive involves recurring action, the time and date when the next action is required; (vii) a list of current major alterations to each airframe, engine, propeller, rotor, and appliance.</p>	<p>Existing Policy: FAA Statement on Inspection Policy, Personnel; AFS-1 Policy Memorandum; Handbook Bulletin for Airworthiness 95-06A; AC120-16C; Order 8300.10 (Vol. 2, Chap 64, 69, Vol. 3, Chap 37).</p>

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
	<p align="center">(c) Each certificate holder shall retain the records required to be kept by this section for the following periods:</p> <p>(1) Except for the records of the last complete overhaul of each airframe, engine, propeller, and appliance, the records specified in paragraph (a)(1) of this section shall be retained until the work is repeated or superseded by other work or for 1 year after the work is performed. (2) The records of the last complete overhaul of each airframe, engine, propeller and appliance shall be retained until the work is superseded by work of equivalent scope and detail. (3) The records specified in paragraph (a)(2) of this section shall be retained and transferred with the aircraft at the time the aircraft is sold.</p>	
43.9	<p>§43.9(b) states that each certificate holder that is required by its approved operations specifications to provide for a continuous airworthiness maintenance program, shall make a record of the maintenance, preventive maintenance, rebuilding, and alteration on aircraft, airframes, aircraft engines, propellers, appliances, or component parts which it operates in accordance with the applicable provisions of Part 121.</p>	
121.365	<p>§121.365(a) states that each certificate holder that performs any of its maintenance (other than required inspections), preventive maintenance, or alterations, and each person with whom it arranges for the performance of that work must have an organization adequate to perform the work.</p> <p align="center">(b) Each certificate holder that performs any inspections required by its manual in accordance with §121.369(b)(2) or (3) (“required inspections”) and each person with whom it arranges for the performance of that work must have an organization adequate to perform that work.</p>	<p>Existing Policy: Handbook Bulletin for Airworthiness 95-06A; Information Bulletin For Airworthiness 95-13; AC 120-16C; Order 8300.10 (Vol. 2, Chap. 64, 69, 70, 76, 221; Vol. 3, Chap. 37, 131).</p>

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
	<p>(c) Each person performing required inspections in addition to other maintenance, preventive maintenance, or alterations, shall organize the performance of those functions so as to separate the required inspection functions from the other maintenance, preventive maintenance, and alteration functions. The separation shall be below the level of administrative control at which overall responsibility for the required inspection functions and other maintenance, preventive maintenance, and alteration functions are exercised.</p>	
121.371	<p>§121.371(d) states that each certificate holder shall maintain, or shall determine that each person with whom it arranges to perform its required inspections maintains, a current listing of persons who have been trained, qualified, and authorized to conduct required inspections. The persons must be identified by name, occupational title, and the inspections that they are authorized to perform. The certificate holder (or person with whom it arranges to perform its required inspections) shall give written information to each person so authorized describing the extent of his responsibilities, authorities, and inspectional limitations. The list shall be made available for inspection by the Administrator upon request.</p>	<p>Existing Policy: Order 8300.10 (Vol. 2, Chap. 70).</p>
121.375	<p>Each certificate holder or person performing maintenance or preventive maintenance functions for it shall have a training program to ensure that each person (including inspection personnel) who determines the adequacy of work done is fully informed about procedures and techniques and new equipment in use and is competent to perform his duties.</p>	<p>Existing Policy: AFS-1 Policy Memorandum; AC120-49; Order 8300.10 (Vol. 2, Chap 70, 221; Vol. 3, Chap 37, 131).</p>
121.379	<p>§121.379(a) states that a certificate holder may perform, or it may make arrangements with other persons to perform, maintenance, preventive maintenance, and alterations as provided in its continuous airworthiness maintenance program and its maintenance manual. In addition, a certificate holder may perform these functions for another certificate holder as provided in the continuous airworthiness maintenance program and maintenance manual of the other certificate holder.</p>	<p>Existing Policy: AFS-1 Policy Memorandum; Handbook Bulletin for Airworthiness 95-06A; AC120-16C; AC120-49; Order 8300.10 (Vol. 2, Chap 64, 69, 76, 84, 221; Vol. 3, Chap 131).</p>

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
145.2	<p>§145.2(a) states that each repair station that performs any maintenance, preventive maintenance, alterations, or required inspections for an air carrier having a continuous airworthiness program under part 121 shall comply with subpart L of part 121 (except §§121.363, 121.369, 121.373, and 121.379). In addition such repair station shall perform that work in accordance with the air carrier's manual.</p>	<p>FAA Order 8000.49; FAA Order 8310.10, Chapter 69.</p>
145.39	<p>§145.39(a) states that an applicant for a domestic repair station certificate and rating, or for an additional rating, must provide adequate personnel who can perform, supervise, and inspect the work for which the station is to be rated. The officials of the station must carefully consider the justifications and abilities of their employees and shall determine the abilities of its uncertificated employees performing maintenance operations on the basis of practical tests or employment records. The repair station is primarily responsible for the satisfactory work of its employees.</p> <p>(b) The number of repair station employees may vary according to the type and volume of its work. However, the applicant must have enough properly qualified employees to keep up with the volume of work in process, and may not reduce the number of its employees below that necessary to efficiently produce airworthy work.</p>	<p>FAA Order 8300.10 (Vol 2, Chap 62, 64, 69, 72, 73).</p>
145.45	<p>§145.45 Inspection Systems, states that: (a) An applicant for a repair station certificate and rating, or for an additional rating, must have an inspection system that will produce satisfactory quality control and conform to paragraphs (b) through (f) of this section.</p> <p>(b) The applicant's inspection personnel must be thoroughly familiar with all inspection methods, techniques, and equipment used in their specialty to determine the quality or airworthiness of an article being maintained or altered.</p> <p>(c) The applicant must provide a satisfactory method of inspecting incoming material to insure that, before it is placed in stock for use in an aircraft or part thereof, it is in a good state of preservation and is free from apparent defects or malfunctions.</p>	<p>FAA Order 8300.10 (Vol 2, Chap 62, 64, 69, 72, 73).</p>

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
	<p>(d) The applicant must provide a system of preliminary inspection of all articles it maintains to determine the state of preservation or defects. It shall enter the results of each inspection on an appropriate form supplied by it and keep the form with the article until it is released to service.</p> <p>(e) The applicant must provide a system so that before working on any airframe, powerplant, or part thereof that has been involved in an accident, it will be inspected thoroughly for hidden damage, including the areas next to the obviously damaged parts. It shall enter the results of this inspection on the inspection form required by paragraph (d) of this section.</p> <p>(f) At the time it applies for a repair station certificate, the applicant must provide a manual containing inspection procedures, and thereafter maintain it in current condition at all times. The manual must explain the internal inspection system of the repair station in a manner easily understood by any employee of the station. It must state in detail the inspection requirements in paragraphs (a) through (e) of this section, and the repair station's inspection system including the continuity of inspection responsibility, samples of inspection forms, and the method of executing them. The manual must refer whenever necessary to the manufacturer's inspection standards for the maintenance of the particular article. The repair station must give a copy of the manual to each of its supervisory and inspection personnel and make it available to its other personnel. The repair station is responsible for seeing that all supervisory and inspection personnel thoroughly understand the manual.</p>	
145.47	<p>§145.47 states that (a) An applicant for a domestic repair station certificate and rating, or for an additional rating, must have the equipment and materials necessary to efficiently perform the functions appropriate to the ratings it seeks. An applicant for an airframe, propeller, powerplant, radio, instrument, or accessory rating must be equipped to perform the functions listed in Appendix A to this Part that are appropriate for the rating he or she seeks.</p> <p>(b) The equipment and materials required by this Part must be of such type that the work for which they are being used can be done competently and efficiently. The station shall ensure that all inspection and test equipment is tested at regular intervals to ensure correct calibration to a</p>	FAA Order 8300.10 (Vol 2, Chap 62, 64, 69, 72, 73).

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
	<p>standard derived from the National Bureau of Standards or to a standard provided by the equipment manufacturer. In the case of foreign equipment, the standard of the country of manufacture may be used if approved by the Administrator. The equipment and materials required for the various ratings must be located on the premises, and under the full control of the station, unless they are used for a function that the repair station is authorized to obtain by contract. If it obtains them by contract, the repair station shall determine the airworthiness of the article involved, unless the contractor is an appropriately rated repair station.</p> <p>(c) A certificated domestic or foreign repair station may contract maintenance and alteration of components of a type certificated product to a noncertificated source identified in the repair station’s inspection procedures manual provided:</p> <p>(1) the repair station is the manufacturer who originally manufactured the product for which it holds a U.S. type certificate; (2) The contracted component is included as part of the type certificated product; (3) The component maintenance is done by the original component manufacturer or its manufacturing licensee; and (4) Before such a component is returned to service, the repair station ensures that it is being returned to service in accordance with the repair stations’ quality control system as approved by the Administrator and set forth in the repair station’s operations specifications and inspection procedures manual.</p> <p>(d) The applicant shall choose suitable tools and equipment for the functions named in Appendix A to this part, as appropriate to each of his ratings, using those the manufacturer of the article involved recommends for maintaining or altering that article, or their equivalent.</p>	
145.55	<p>§145.55 states that each certificated domestic repair station shall provide personnel, facilities equipment, and materials at least equal in quality and quantity to the standards currently required for the issue of the certificate and rating that it holds.</p>	<p>FAA Order 8300.10 (Vol. 2, Chap 165).</p>

MAINTENANCE—Air Carrier Requirements

REG	TEXT	GUIDANCE
145.57	§145.57(a) states that except as provided in §145.2, each certificated domestic repair station shall perform its maintenance and alteration operations in accordance with the standards in part 43 of this chapter. It shall maintain, in current condition, all manufacturers' service manuals, instructions, and service bulletins that relate to the articles that it maintains or alters.	
145.61	§145.61 states that each certificated domestic repair station shall maintain adequate records of all work that it does, naming the certificated mechanic or repairman who performed or supervised the work, and the inspector of that work. The station shall keep each record for at least two years after the work it applies to is done.	

TRAINING—Air Carrier Requirements

REG	TEXT	GUIDANCE
121.401	<p>§121.401(a) states that each certificate holder shall: (1) Establish, obtain the appropriate initial and final approval of, and provide, a training program that meets the requirements of appendixes E and F and that insures that each crew member, aircraft dispatcher, flight instructor, and check airman, and each person assigned duties for the carriage and handling of dangerous articles and magnetized materials, is adequately trained to perform his assigned duties.</p>	<p>Existing Policy: Order 8400.10 (Vol 3, Chap 2, 3).</p>
121.402 (new)	<p>§121.402(a) states that other than the certificate holder, only another certificate holder certificated under part 121 or a training center certificated under Part 142 is eligible to provide training, testing, and checking under contract or other arrangement to those persons subject to the requirements of this subpart.</p> <p>(b) A certificate holder may contract with, or otherwise arrange to use the services of, a training center certificated under Part 142 of this chapter to provide training, testing, and checking required by this part only if the training center: (2) Has facilities, training equipment, and courseware meeting the applicable requirements of part 142 of this chapter; (3) Has approved curriculums, curriculum segments, and portions of curriculum segments applicable for use in training courses required by this subpart; and (4) Has sufficient instructor and check airmen qualified under the applicable requirements of §121.411 or §121.413 to provide training, testing, and checking to persons subject to the requirements of this subchapter.</p>	<p>Policy Memorandum # 54; Order 8400.10 (Vol. 3, Chap 2). FAA Order 8000.49B.</p>
SFAR58	<p>Special Federal Aviation Regulation 58 provides for approval of an alternate method (known as "Advanced Qualification Program" or "AQP") for qualifying, training, certifying, and otherwise ensuring competency of crew members, aircraft dispatchers, other operations personnel, instructors, and evaluators who are required to be trained or qualified under part 121.</p> <p>SFAR-58 paragraph 11(a) states that a certificate holder under part 121 may arrange to have AQP required training, qualification, or evaluation functions performed by another person (a "training center") if the following requirements are met: (1) The training center's training and qualification curriculums must be provisionally approved by the Administrator. A training center may apply for provisional approval independently or in conjunction with a certificate</p>	<p>Preamble to Part 142, Fed.R. July 2, 1996.</p>

TRAINING—Air Carrier Requirements

REG	TEXT	GUIDANCE
	<p>holder's application for AQP approval. Application for provisional approval must be made to the FAA's Flight Standards District Office that has responsibility for the training center. (2) The specific use of provisionally approved curriculums in a certificate holder's AQP must be approved by the Administrator.</p> <p>(b) An applicant for provisional approval of a curriculum must show that the following requirements are met: (1) The applicant must have a curriculum for the qualification and continuing qualification of each instructor or evaluator employed by the applicant. (2) The applicant's facilities must be found by the Administrator to be adequate for any planned training, qualification, or evaluation for a part 121 certificate holder. (3) Except for indoctrination, curriculums must identify the specific make, model, and series aircraft (or variant) and crew member or other positions for which it is designed.</p> <p>(c) A certificate holder who wants approval to use a training center's provisionally approved curriculum in its AQP, must show that the following requirements are met: (1) Each instructor or evaluator used by the training center must meet all of the qualification and continuing qualification requirements that apply to employees of the certificate holder that has arranged for the training, including knowledge of the certificate holder's operations. (2) Each provisionally approved curriculum must be approved by the Administrator for use in the certificate holder's AQP. The Administrator will either provide approval or require modifications to ensure that each curriculum applicable to the certificate holder's AQP.</p> <p>SFAR-58 paragraph 12 states that each certificate holder and each training center holding AQP provisional approval shall show that it will establish and maintain records in sufficient detail to establish the training, qualification, and certification of each person qualified under an AQP in accordance with the training, qualification, and certification requirements of this SFAR.</p>	
121.431	<p>§121.431(a)(2) permits training center personnel authorized under Part 142 who meet the requirements of §§121.411 and 121.413 to provide training, testing and checking under contract or other arrangement to those persons subject to the requirements of this subpart.</p>	<p>Preamble to Part 142, Fed.R. July 2, 1996.</p>
142.73	<p>§142.73(a) states that (a) a training center must maintain a record for each trainee that contains--(1) The name of the</p>	<p>Preamble to Part 142, Fed.R. July 2, 1996.</p>

TRAINING—Air Carrier Requirements

REG	TEXT	GUIDANCE
	<p>trainee; (2) A copy of the trainee's pilot certificate, if any, and medical certificate; (3) The name of the course and the make and model of flight training equipment used; (4) The trainee's prerequisite experience and course time completed; (5) The trainee's performance on each lesson and the name of the instructor providing instruction; (6) The date and result of each end-of-course practical test and the name of the evaluator conducting the test; and (7) The number of hours of additional training that was accomplished after any unsatisfactory practical test.</p> <p>(c) The training center shall--(1) Maintain the records required by paragraph (a) of this section for at least 1 year following the completion of training, testing or checking.</p> <p>(d) The training center must provide the records required by this section to the Administrator, upon request and at a reasonable time, and shall keep the records required by--(1) (a) at the training center, or satellite training center where the training, testing, or checking, if appropriate, occurred.</p> <p>(e) The certificate holder shall provide to a trainee, upon request and at a reasonable time, a copy of his or her training records.</p>	

APPENDIX D – REFERENCES TO FAA ORDERS

INSPECTOR AND AIR CARRIER GUIDANCE

The guidance provided to inspectors consists of FAA Orders, which include the specific inspector “Handbooks”; Handbook Bulletins; Flight Standards Information Bulletins (FSIB); Air Carrier Operations Bulletins (ACOB); Notices; FAA policy memoranda; FAA policy letters; and Advisory Circulars (AC).

FAA Orders are policy and procedure documents which are directed to all FAA employees. These orders apply to all facets of the agency’s mission. The most commonly used Orders, by inspectors, for the purpose of this report are:

8300.10 Airworthiness Inspector’s Handbook
8400.10 Air Transportation Operations Inspector’s Handbook
8430.17 Air Carrier Operations Bulletins
8000.49B Flight Standards Geographic Program

The **Handbooks** are Orders which are intended to address a particular subject matter area. FAA Order 8300.10 contains guidance for airworthiness inspectors; Order 8400.10 is directed toward air carrier operations inspectors; Order 8700.10 is for use by general aviation operations inspectors. Some of the Handbooks, at least in part, cross lines of expertise.

Handbook Bulletins are used to disseminate guidance to inspectors between major changes to the Handbooks and are, in effect, interim amendments. These bulletins are contained in Appendix 3 of the respective Handbook.

Flight Standards Information Bulletins are issued to address a narrow topic and constitute amendments to Appendix 4 of the Handbooks (8300; 8400; 8700). These bulletins generally have specified expiration dates ranging up to a year, but can also be extended. Inspectors are instructed in some cases to provide copies of these bulletins to air carriers, repair stations, and other operators. The bulletins have been used to convey, for example, NTSB or FAA safety recommendations that result from the findings of incidents or accidents.

Air Carrier Operations Bulletins are similarly information bulletins, but are contained in FAA Order 8430.17. They convey information about special conditions pertaining to specific aircraft or operations that have a bearing on safety. Air carriers generally received copies of these bulletins. As of 1994, no more are being issued, and further bulletin information is now provided through Order 8400.10 (Air transportation Operations Inspector’s Handbook).

Notices are also guidance, but only cover interim measures. They are usually effective for 1 year before they expire automatically. Despite their expiration, they may hold information that is still valid but is not incorporated into other guidance materials.

Policy memoranda and **policy letters** are other forms of policy guidance. These are issued by the Director of Flight Standards, generally for national implementation. Memoranda are for the most part contemplated for intra-agency circulation only. Policy letters are intended for external dissemination.

Advisory Circulars are published by the agency primarily to provide guidance to those regulated by the FAA on acceptable means for complying with the Federal Aviation Regulations. ACs generally address a particular issue where the agency perceives a need for further public information and advisory guidance. This information is also helpful to the safety inspector in resolving regulatory issues and advising air carriers and other companies within his or her surveillance purview.

GUIDANCE SCHEME CHART

CERTIFICATION—Initial Requirements	
CURRENT GUIDANCE	TEXT
<p>OST INFORMATION PACKET ON AIR CARRIER LICENSING</p>	<p>INFORMATION PACKET ON HOW TO BECOME A CERTIFICATED AIR CARRIER</p> <p>This publication describes the OST fitness application filing and certification process.</p>
<p>AIR TRANSPORTATION OPERATIONS INSPECTOR'S HANDBOOK BULLETIN</p> <p>HBAT 95-14</p> <p>Date: October 6, 1995</p>	<p>APPLICATION OF A "GATE CONCEPT" TO FAR PART 121 AND FAR PART 135 INITIAL CERTIFICATION</p> <p>This bulletin describes the "gate concept" for use in the certification process.</p>
<p>ORDER 8300.10</p> <p>VOL. 2</p> <p>Chapter 64</p> <p>Section 1, Background</p> <p>Dated: July 17, 1992</p>	<p>EVALUATE CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM/REVIEW</p> <p>5(E) Operator/Applicant's Organization. The operator/applicant must have an organization adequate to carry out the provisions of the continuous airworthiness maintenance program. If the work is to be performed outside of the operator/applicant's organization, the contractor must meet the same requirements.</p> <p>7(E)(1) Return to Service. The persons exercising certificate privileges have always had the responsibility to show compliance with regulatory requirements and to make a determination of conformance and safety.</p> <p>7(G) Maintenance Performed for Other Operators. An operator with an approved continuous airworthiness maintenance program under FAR Parts 121 or 135 may also perform maintenance for another certificate holder under the same FAR part. Such maintenance must be performed in accordance with that certificate holder's approved program, including aircraft of 9 or less passenger seats. However, an operator under FAR Part 135 is not authorized to perform maintenance for an operator under FAR Part 121, and vice versa.</p>

CERTIFICATION—Initial Requirements	
CURRENT GUIDANCE	TEXT
ADVISORY CIRCULAR 120-49 Date: November 23, 1988	CERTIFICATION OF AIR CARRIERS 5(l) Documents of purchase, leases, contracts, and/or letters of intent attachments. Examples of the types of equipment, facilities, and services which should be addressed in these documents are as follows: (ix) Contract training and training facilities (If Applicable).
ORDER 8300.10 VOL. 2 Chapter 224 Dated: September 8, 1989 NOTE: Rescinded by Chg. 10	INSPECT CONTRACT MAINTENANCE FACILITY This chapter describes the process used to inspect a contract maintenance facility during the certification of a FAR 121 or 135 (10 or more) operator.
OST INFORMATION PACKET ON AIR CARRIER LICENSING	INFORMATION PACKET ON HOW TO BECOME A CERTIFICATED AIR CARRIER This publication describes the OST continuing fitness requirements, including when updated information must be filed with OST as a result of a “substantial change” in ownership, management, or operations.
ORDER 8000.68 Dated: February 6, 1989	FLIGHT STANDARDS NATIONAL AVIATION SAFETY INSPECTION PROGRAM 1. Purpose. This order prescribes the Flight Standards National Aviation Safety Inspection Program (NASIP) for special in-depth inspections of selected air carriers, air operators and air agencies. 7(a) The Flight Standards Service, Field Programs Division, Current Operations Branch, AFS-540, is designated as the headquarters focal point to coordinate the activities required by the NASIP.
NOTICE 1800.136 Dated: July 26, 1996	NATIONAL FLIGHT STANDARDS WORK PROGRAM GUIDELINES 4(h) It is important that the Principal Inspectors for the air carriers have regular communication and interaction with the Principal Inspectors for the repair stations used by the air carriers.
ORDER 1800.56 Dated: October 11, 1985	ADMINISTRATION OF AVIATION STANDARDS ACTIVITIES PROGRAM GUIDELINES 1. Purpose. This order provides general guidance to Aviation Standards organizational units for development and execution of annual work programs.

CERTIFICATION—Initial Requirements	
CURRENT GUIDANCE	TEXT
<p>ORDER 8000.49B</p> <p>Date: May 21, 1992</p>	<p>FLIGHT STANDARDS GEOGRAPHIC PROGRAM</p> <p>5(e) Contract Maintenance/Agreements. For the purpose of this order, maintenance that is contracted or arranged by an operator from vendors listed in the operator’s manuals and/or approved vendors’ list (including repair stations), as well as persons performing emergency maintenance. Contract fueling, passenger and cargo handling, etc., are not “contracted maintenance.”</p> <p>6(f) Geographic Program Managers (GPM) and Partial Program Managers(PPM) are an integral part of the certificate management team and serve an essential role as the eyes and ears of the principal inspectors by accomplishing inspection, surveillance and airman certification functions. Timely and direct communications or coordination between Flight Standards offices and/or between principal inspectors and geographic units are essential to the success of the certificate management team.</p> <p>8(b) The key to this effective certificate management team concept is communication and coordination between geographic offices and PI’s while developing a geographic work program.</p> <p>12(c) It cannot be overemphasized that uninhibited communication is the cornerstone of the geographic-certificate management relationship. In that case GPM’s/PPM’s are required by FAA Order 2150.3A, Compliance and Enforcement Program, to communicate findings of suspected noncompliance to the responsible PI, or designated representative, to coordinate the enforcement action intended before proceeding with the other investigatory procedures outlined in FAA Order 2150.3A.</p> <p>14(a) All certificate management responsibilities for repair stations including surveillance of maintenance performed under FAR §145.2, rests with the assigned FAR Part 145 PI’s. Surveillance of aircraft maintenance performed by repair stations for FAR Parts 121 and 135 major air carriers with a continuous airworthiness maintenance program should be performed by geographic inspectors, since they serve as an extension of FAR Parts 121 and 135 air carrier PI’s. All geographic surveillance should be coordinated with the FAR Part 145 repair station PI’s to avoid duplication of effort.</p> <p>14(c) Contract Maintenance. Contract maintenance performed within the CHDO boundaries will be monitored by the PI assigned to the certificate. Geographic inspectors will conduct surveillance of contract maintenance performed within the local office boundaries on operators whose certificates are held by another office.</p>
<p>ORDER 8300.10</p>	<p>CONDUCT EVALUATION OF OPERATOR/APPLICANT’S</p>

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<p>VOL. 2</p> <p>Chapter 221, Section (1)</p> <p>Dated: August 13, 1993</p>	<p>MAINTENANCE FACILITY</p> <p>7(B) Contract Maintenance Arrangements. If any maintenance will be performed by a contract facility, an inspection must be performed at the contractor’s facility. During the inspection the inspector must determine if the contractor has adequate facilities and personnel to perform the contracted work. The inspector must keep in mind that the contract maintenance facility is an extension of the operator/applicant’s overall maintenance organization. The maintenance to be performed by the contractor must be in accordance with the operator/ applicant’s approved maintenance program.</p> <p>7(B)(1) For inspections of a contract maintenance facility located out of the geographic boundaries of the CHDO, assistance should be requested from the FSDO in which the facility is located. A list of contractor management personnel to be contacted can be obtained from the operator/applicant.</p> <p>7(B)(3) The contract maintenance facility should be inspected to ensure that they are properly certificated and rated for the scope of work to be performed, e.g., aircraft, power plant, propeller, components, and accessories.</p> <p>Section 2, Procedures, 1(B) This task may require coordination with the following:</p> <ul style="list-style-type: none"> • Between the assigned PAI • Between the operator’s PAI and the contractor’s FSDO
<p>ORDER 8300.10</p> <p>VOL. 3</p> <p>Chapter 37</p> <p>Dated: August 13, 1993</p>	<p>MONITOR CONTINUING ANALYSIS AND SURVEILLANCE PROGRAM/REVISION</p> <p>7(B)(2) Operator size. The complexity and sophistication of the program should be relative to the operator’s operation. A small operator should not be expected to have a program suitable for a large operator; however, all programs must have, as a minimum, monitoring mechanical performance and audit functions.</p> <p>7(B)(4)(a) Auditing is normally on-the-scene observations and should be a scheduled, on-going activity encompassing periodic audits of contract agencies.</p> <p>7(B)(4)(b) Vendors are properly authorized, qualified, staffed, and equipped to do the contractor function according to the operator’s manual.</p> <p>7(B)(5) Use of contractors. When the operator contracts with another operator and/or repair station for maintenance support, the operator is</p>

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	<p>still responsible for continuing analysis and surveillance requirements. The responsibility for administering or controlling a continuing analysis and surveillance program can never be contracted out. However, contract organizations may be used to collect operational data, make analyses and recommendations, perform audits, and report information to be used by the operator in identifying deficiencies and implementing corrective actions.</p> <p>Section 2, Procedures, 5, C(6)(a) The procedures must provide a continuous audit of the total maintenance program, including contract agencies. The procedures must state:</p> <ul style="list-style-type: none"> • Who is responsible for performing audits (normally, an independent agency that is assigned to the quality assurance/inspection department). • What is being audited (e.g., manuals, maintenance, record entries, Required Inspection Items (RII), training, airworthiness release, deferred maintenance, vendors, etc.). • When the audits are performed. • How the audits are documented. • How records are retained.
ORDER 2150.3A	<p style="text-align: center;">COMPLIANCE AND ENFORCEMENT PROGRAM</p> <p>This document provides policy and guidance regarding enforcement actions against air carriers, air operators, air agencies, etc.</p>
<p>JOINT HANDBOOK BULLETIN FOR AIRWORTHINESS AND AIR TRANSPORTATION, HBAW 92-19 AND HBAT 92-15</p> <p>NOTE: Both Bulletins have expired</p>	<p>These bulletins addressed policy and procedures regarding surveillance of financially distressed operators.</p>

MAINTENANCE: Air Carrier Requirements	
CURRENT GUIDANCE	TEXT
<p>ORDER 8300.10 VOL. 2 Chapter 76 Dated: December 14, 1990</p>	<p>CONDUCT FAR PART 121/135 PROVING/VALIDATION TEST</p> <p>13(G)(2)(d) maintenance problems that will demonstrate:</p> <ul style="list-style-type: none"> • The availability of contracted support agencies, if required, e.g., fueling, de-icing, and non-routine maintenance
<p>ORDER 8300.10 VOL. 2 Chapter 84 Dated: June 24, 1992</p>	<p>FAR PART 121/135 OPERATIONS SPECIFICATIONS</p> <p>29(G) Paragraph D77 - Maintenance Contractual Arrangement Authorization for an entire aircraft. This paragraph authorizes a certificate holder to use a contractor's approved maintenance program for the maintenance of its entire aircraft, including participation in the contractor's reliability program.</p> <p>29(H) Paragraph D78 - Maintenance Contractual Arrangement Authorization for Specific Maintenance. This paragraph authorizes a certificate holder to arrange with one or more contractors for specific maintenance functions using the contractor's approved maintenance program.</p> <p>Section (2), Procedures, 5(H)(7) Paragraph D77 - Maintenance Contractual Arrangement Authorization for an Entire Aircraft. This paragraph should appear for a certificate holder authorized to use a contractor's approved maintenance program for maintenance of its entire aircraft. This includes participation in the contractor's reliability program.</p> <p>Section (2), Procedures, 5(H)(8) Paragraph D78 - Maintenance Contractual Arrangement Authorization for Specific Maintenance. This paragraph authorizes a certificate holder to arrange with one or more contractors for specific maintenance functions using the contractor's approved maintenance program.</p> <p>Section (2), Procedures, 5(H)(9) Paragraph D78 - Table 2 - Supplemental Paragraph. Ensure this paragraph identifies the functions to be performed by the contractor(s) listed in paragraph D78.</p> <p>Operations Specifications:</p> <p>D77. Maintenance Contractual Arrangement Authorization: For Entire Aircraft The certificate holder is authorized to use the provisions of the contractual agreement listed in the following table for the maintenance of the aircraft listed in accordance with the contractor's approved continuous maintenance program.</p> <p>a. The certificate holder is authorized to participate in the contractor's reliability program, identified in the table above with the certificate holder's aircraft included in the contractor's fleet for the purpose of that</p>

MAINTENANCE: Air Carrier Requirements

CURRENT GUIDANCE	TEXT
	<p>program. Maintenance intervals and assignment of maintenance processes are controlled by that program.</p> <p>b. The certificate holder shall ensure that each component, system, and structure unique to its aircraft is accounted for in the certificate holder's or the contractor's maintenance program.</p> <p>c. Each maintenance contract must provide that all maintenance records applicable to the certificate holder's aircraft shall be maintained by the contractor at the maintenance bases identified in the agreements and the certificate holder's manual.</p> <p>d. The certificate holder shall forward each maintenance record generated during the term of the agreement to the contractor for inclusion in the records of the certificate holder's aircraft. The certificate holder shall retain a copy of these maintenance records in its files for each aircraft.</p> <p>e. The certificate holder shall determine that all replacement components, other than those provided by the contractor which are common to the above-listed aircraft and the contractor's fleet, are evaluated by the contractor to ensure they meet the contractor's standards.</p> <p>f. Administration of these agreements and related policies and procedures, including those pertaining to the control of maintenance interval listed, shall be included in the certificate holder's manual.</p> <p>g. This agreement provides for the contractor to perform ALL SCHEDULED MAINTENANCE ABOVE THE "A" CHECK, including structural inspections, powerplant shop maintenance in accordance with the contractor's method's, standards, and procedures.</p> <p>h. The contractor shall provide the certificate holder with a current copy of the publication and documents relating to the contractor's maintenance program as listed in that agreement and revisions. All maintenance performed by the certificate holder shall be in accordance with those publications and documents.</p> <p>i. The authorization for the certificate holders' contractual maintenance arrangements shall be subject to re-evaluation by the FAA if any of the following situations occur:</p> <p>(1) The certificate holder's contractual arrangements are canceled or altered.</p> <p>(2) The contractor should cease to provide the contracted service for any reason.</p> <p>(3) The contractor's certificate is amended, suspended, revoked, or otherwise terminated.</p>

MAINTENANCE: Air Carrier Requirements	
CURRENT GUIDANCE	TEXT
	<p>D78. Maintenance Contractual Arrangement Authorization: For Specific Maintenance.</p> <p>The certificate holder is authorized to use the provisions of the contractual agreements listed in the following table. Maintenance is limited to those functions listed for the contractor in subparagraph f.</p> <p>a. All maintenance accomplished under this authorization shall be in accordance with the contractor’s approved maintenance program.</p> <p>b. The contractor shall provide the certificate holder with a current copy of the publications and documents relating to the contractor’s maintenance as listed in the agreement and revision.</p> <p>c. Maintenance records applicable to work performed under the terms of this agreement shall be maintained by the respective contractor at the maintenance facilities identified in the contract agreement and the certificate holder’s manual.</p> <p>d. The certificate holder shall maintain a copy of all maintenance records of work performed by the contractor.</p> <p>e. Administration of this agreement and related policies and procedures, including those pertaining to the control of maintenance interval limits shall be included in the certificate holder’s manual.</p> <p>f. The agreements identified in table 1 provide for the performance of the following maintenance functions:</p> <p>g. In the event this arrangement is canceled, altered, or if the contractor should cease for any reason to provide the services contracted for, the entire program is subject to re-evaluation by FAA.</p>
<p>FLIGHT STANDARDS HANDBOOK BULLETIN FOR AIRWORTHINESS, HBAW 96-05B</p>	<p>AIR CARRIER OPERATIONS SPECIFICATIONS AUTHORIZATION TO MAKE ARRANGEMENTS WITH OTHER ORGANIZATIONS TO PERFORM SUBSTANTIAL MAINTENANCE</p> <p>This bulletin addresses the issuance of Operations Specifications Paragraph D91, authorizing the use of contractors providing “substantial” maintenance.</p>

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CURRENT GUIDANCE	TEXT
<p>FLIGHT STANDARDS BULLETIN FOR AIRWORTHINESS, HBAW 95-06A</p> <p>Dated: July 28, 1995</p>	<p>MAINTENANCE PROGRAMS FOR AIRCRAFT ENGINES, INCLUDING LEASED ENGINES, USED BY OPERATORS OF TRANSPORT CATEGORY AIRCRAFT</p> <p>4. According to the FAR, each certificate holder is primarily responsible for the airworthiness of its aircraft including airframe, aircraft engines, propellers, appliances, and parts thereof.</p> <p>It is important to remember that operators are mandated to provide a system for the continuous analysis and surveillance (CASS) of its continuous airworthiness maintenance program, including work performed according to that program by another person.</p>
<p>ADVISORY CIRCULAR 120-17A</p> <p>Dated: March 27, 1978</p>	<p>MAINTENANCE CONTROL BY RELIABILITY METHODS</p> <p>Chapter 1. This publication provides information on the application of reliability control methods as an integral part of an approved aircraft maintenance program for operators subject to the provisions of FAR Part 121.</p>
<p>ORDER 8300.10</p> <p>VOL. 2</p> <p>Chapter 74</p> <p>Dated: August 13, 1993</p>	<p>EVALUATE FAR PART 121/135 (10 OR MORE AND TURBINE POWERED AIRCRAFT) OPERATOR'S WEIGHT AND BALANCE CONTROL PROGRAM</p> <p>13. An operator/applicant may use a contractor to weigh items required to be weighed. However, the operator/applicant is responsible for ensuring that the contractor complies with the operator/applicant's approved weight and balance control program.</p>

MAINTENANCE: Air Carrier and Contractor Requirements	
CURRENT GUIDANCE	TEXT
<p>FAA STATEMENT ON INSPECTION POLICY, PERSONNEL</p> <p>Dated: June 18, 1996</p>	<p>Airlines will be required to demonstrate regulatory compliance of each of their major contract maintenance programs at each facility doing substantial heavy maintenance or repairs. A review of the procedures used to carry out this work will be accomplished, ensuring that the procedures are part of the carrier's approved maintenance program. Quality assurance oversight being provided by the carrier will be reviewed to ensure that the work conducted by the contractor conforms with the carrier's approved maintenance program and is carried out in accordance with regulatory requirements levied on the carrier.</p> <p>The carrier must conduct an audit of the contractor. This audit must demonstrate to the principal inspector that the contractor is capable of performing the contracted work in accordance with the carrier's approved program.</p>
<p>AFS-1, POLICY MEMORANDUM</p> <p>Dated: June 28, 1996</p>	<p>Air Carriers will now be required to demonstrate the regulatory compliance of each of their major contract maintenance programs. Carriers list all contractors performing substantial heavy maintenance in their operations specifications (OpSpecs).</p> <ol style="list-style-type: none"> 1. By July 15, 1996, the air carrier must provide a current list of contract maintenance organizations used by the carrier. By August 15, 1996, those current contractors must be listed on the OpSpecs. 2. Effective September 1, 1996, all new contractors must be listed on the OpSpecs. 3. No new contractors will be authorized in OpSpecs after September 1, 1996, without an audit having been completed by the air carrier proposing to use the contractor. A copy of the air carrier's audit report must be submitted to the FAA.
<p>AIRWORTHINESS HANDBOOK BULLETIN 92-08 FAA ORDER 8300.10</p> <p>Dated: July 17, 1992</p>	<p>CLARIFICATION OF VOLUME 2, CHAPTER 69 OF THE FAA ORDER 8300.10, AIRWORTHINESS INSPECTOR'S HANDBOOK</p> <p>Volume 2, Chapter 69, addresses FAR Part 121 and 135 contractual maintenance arrangements. Paragraph 5(A)(1) infers that like certificate holders may not perform maintenance for other like certificate holders unless they also operate like equipment.</p>

MAINTENANCE: Air Carrier and Contractor Requirements	
CURRENT GUIDANCE	TEXT
<p>FLIGHT STANDARDS INFORMATION BULLETIN FOR AIRWORTHINESS, FSAW 95-13</p> <p>NOTE: Expired</p> <p>Date: October 3, 1995</p>	<p>FAR 121.377 MAINTENANCE AND PREVENTIVE MAINTENANCE PERSONNEL DUTY TIME LIMITATIONS</p> <p>3. Guidance. All PMI's with certificate responsibilities for FAR Part 121 air carriers are requested to notify their respective operators that they are required to surveil the respective contract maintenance organization to ensure that those organizations are complying with §121.377 of the FAR.</p>
<p>ADVISORY CIRCULAR 120-16C</p> <p>Dated: August 8, 1980</p>	<p>CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAMS</p> <p>5(b) With these privileges go the overall responsibility for the effectiveness of the program and for all work performed in accordance with the program. This responsibility applies to work performed by the operator as well as work performed for the operator by other persons.</p> <p>8. Arrangements With Other Persons For Maintenance. When an operator uses the services of another person to accomplish all or part of its continuous airworthiness maintenance program, that person's organization becomes, in effect, an extension of the operator's organization. The operator must determine the person's capability to do the work and must provide appropriate material from its maintenance manual for that work.</p> <p>8(a) The operator should execute contractual agreements with the persons performing its work on a continuing basis to ensure the operator's interests are met. In the case of major operations such as engine overhaul, the agreement should denote a specification for the work and that specification should be included or referenced as part of the operator's manual system.</p> <p>9. Continuing Analysis and Surveillance. FAR 121.373 and similar provisions of FAR 127 and 135 require the operator to provide a system for continuing analysis and surveillance of its continuous airworthiness maintenance program including work performed according to that program by another person. This requirement, in effect, establishes a quality control or internal audit function.</p>
<p>ORDER 8300.10</p> <p>VOL. 2</p> <p>Chapter 69</p> <p>Dated: August 13, 1993</p>	<p>EVALUATE FAR PART 121/135 MAINTENANCE CONTRACTUAL ARRANGEMENTS</p> <p>5(A) A contractual arrangement extends the maintenance facilities and capabilities of an operator for accomplishing elements of the approved maintenance program. An operator contracting to have maintenance performed by another certificate holder may be authorized by operations specifications to adopt all or part of the contractor's maintenance program, including involvement in that contractor's reliability program.</p>

MAINTENANCE: Air Carrier and Contractor Requirements	
CURRENT GUIDANCE	TEXT
	<p>5(A)(1) The operator retains primary airworthiness responsibility, regardless of the terms of any contractual arrangement. It is the operator's responsibility to verify the suitability of the arrangement.</p> <p>5(A)(2) A contractor must have the capabilities and facilities to perform the contracted work.</p> <p>5(A)(4)(a) FAR §§ 121.369 and 135.427 require an operator to list in its manual the persons with whom it contracts for maintenance and include a description of the contracted work.</p> <p>Section 2, Procedures, (1)(B) The task requires coordination with the Principal Maintenance Inspector (PMI) and Principal Avionics Inspector (PAI) and may also require coordination with the Certificate Holding District Office, having responsibility for the contracted operator.</p> <p>Section 2, Procedures, 5(C)(2) Procedures to ensure: Periodic evaluations of the contractor's facility are accomplished as required by FAR §§ 121.373, or 135.431.</p> <p>Section 2, Procedures, 5(D)(1) If the contractor is located in the same district as the operator, the operator's Principal Airworthiness Inspector must inspect the facilities and determine the contractor's authorization and capabilities.</p> <p>Section 2, Procedures, 5(D)(2) If the contractor is located outside of the CHDO's geographic area of responsibility, the operator's Principal Airworthiness Inspector should request the assistance of the contractor's CHDO to determine the contractor's authorization and capabilities.</p> <p>7(B) If the contractor is determined to be unsatisfactory, deny the operator the used of that contractor.</p>
<p>ORDER 8300.10</p> <p>VOL. 2</p> <p>Chapter 67</p> <p>Dated: August 13, 1993</p>	<p>APPROVE CONTRACT RELIABILITY PROGRAM</p> <p>5(A)(2) Contractor: An operator contracting out an approved maintenance program controlled by a reliability program to another operator.</p> <p>7(A) Contractual Maintenance Agreements: Contractual maintenance agreements are used by operators for various reasons, including:</p> <ul style="list-style-type: none"> • The impracticality of staffing and equipping a maintenance facility. • Lack of a technical support staff to develop effective maintenance programs. • Insufficient reliability control due to a lack of statistical data. <p>7(B) Under contractual maintenance agreements, an operator's aircraft are treated as part of a contractor's operating fleet.</p>

MAINTENANCE: Air Carrier and Contractor Requirements

CURRENT GUIDANCE	TEXT
	<p>9. Operator/Applicant and Contractor Comparability. When evaluating a contractual arrangement for a reliability program, the following must be considered:</p> <ul style="list-style-type: none">(A) Contractor's Equipment(B) Contractor's Utilization(C) Contractor's Flight Cycle Length(D) Contractor's Environment <p>17. Contractual Agreement. The requirements imposed on the contractor by the operator/applicant's maintenance program, reliability program, and operations specifications must be supported by the contractual agreement.</p> <p>Section 2, Procedures, 1(B) Coordination.</p> <p>This task requires coordination between Airworthiness Inspectors.</p> <p>Section 2, Procedures, 5(B) Contact the Contractor's CHDO.</p> <ul style="list-style-type: none">(1) Ensure that the contractor has a valid certificate, an approved continuous airworthiness maintenance program, and an approved reliability program.(2) Review the content of the contractor's reliability program.(3) Determine the types of equipment the operator/applicant has in operation. <p>Section 2, Procedures, 5(E) Evaluate the Operator/Applicant's and the Contractor's Organizational Structures.</p> <p>Section 2, Procedures, 5(G)(3) Verify that the operator/applicant's manual includes procedures for collecting the required data and sending it to the contractor in accordance with the contractual agreement. The required data should include corrective actions as well as shop repair records for work performed away from the contractor's facility.</p> <p>Section 2, Procedures, 5(P) Inspect the Contract Maintenance Facility. Determine if the contractor is capable of meeting its contractual obligations. Provide the district office with the information necessary to perform the inspections, such as the contractual arrangement and operator/applicant's manual procedures.</p>

MAINTENANCE: Air Carrier and Contractor Requirements	
CURRENT GUIDANCE	TEXT
<p>ORDER 8300.10 VOL. 3 Chapter 40 Dated: August 13, 1993</p>	<p>INSPECT FAR PART 121/135 CONTRACTUAL RELIABILITY PROGRAM</p> <p>5(A)(2) Contractor: An operator contracting out an approved maintenance program controlled by a reliability program to another operator.</p> <p>5(B) This inspection is meant to ensure that the contractor's reliability program is effectively controlling the maintenance program. This inspection determines the operator's continued compliance with the following:</p> <ul style="list-style-type: none"> • Contractual agreement. <p>5(C) The contractor will have detailed procedures in its reliability document for revising required time limitations.</p> <p>Section 2, Procedures 1(B). This task requires coordination between the principal inspectors assigned to the operator and those assigned to the contractor.</p>
<p>ORDER 8300.10 VOL. 2 Chapter 84 Dated: June 24, 1992</p>	<p>29(I) Paragraph D79 - Reliability Program Contractual Arrangement Authorization. This paragraph authorizes a certificate holder to participate in another certificate holder's FAA-approved reliability program for its aircraft or engines.</p> <p>Section 2, Procedures, 5(H)(10) Paragraph D79 - Reliability Program Contractual Arrangement Authorization. This paragraph authorizes a certificate holder to participate in another certificate holder's FAA-approved reliability program for its aircraft or engines.</p>

MAINTENANCE: Contractor Requirements	
CURRENT GUIDANCE	TEXT
<p>ORDER 8300.10</p> <p>VOL. 3</p> <p>Chapter 131</p> <p>Dated: August 13, 1993</p>	<p>INSPECT OPERATOR'S MAINTENANCE FACILITY</p> <p>Section (1) 7(D) Contract Maintenance Arrangements. If any maintenance will be performed by a contract facility, an inspection must be performed at the contractor's facility. During the inspection the inspector must determine if the contractor has adequate facilities and personnel to perform the contracted work. The inspector must keep in mind that the contract maintenance facility is an extension of the operator's overall maintenance organization. Maintenance performed by the contractor must be in accordance with the operator's approved maintenance program.</p> <p>Section (1) 7(D)(1) For inspections of a contract maintenance facility located out of the geographic boundaries of the CHDO, assistance should be requested from the FSDO in which the facility is located. A list of contractor management personnel to be contacted can be obtained from the operator.</p> <p>Section (1) 7(D)(3) The contract maintenance facilities should be inspected to ensure that they are properly certificated and rated for the scope of work performed, e.g., aircraft, power plant, propeller, components, and accessories.</p>
<p>ORDER 8300.10</p> <p>VOL. 2</p> <p>Chapter 163</p> <p>Dated: October 30, 1995</p>	<p>CERTIFICATE FAR PART 145 FOREIGN REPAIR STATION</p> <p>Section (1) 7(B)(1) When a Flight Standards District Office is notified by an air carrier of the need to use the services of a certificated repair station at a place other than the location of the station, the repair station's CHDO must be notified. Coordination between the two offices must be established to ensure that there will be no duplication of effort whichever office performs the inspection, the assigned ASI must accomplish the following:</p> <ul style="list-style-type: none"> • Determine if the air carrier has the necessary procedures to ensure that the maintenance performed by the repair station is performed in accordance with the air carrier's manual. • Ensure that the repair station personnel are trained and qualified to perform the required work in accordance with the air carrier's manual procedures.

MAINTENANCE: Contractor Requirements	
CURRENT GUIDANCE	TEXT
<p>ORDER 8300.10 VOL. 2 Chapter 164 Dated: October 30, 1995</p>	<p>EVALUATE FAR PART 145 INSPECTION PROCEDURES MANUAL/REVISION</p> <p>Section (1) 5(E)(1) Repair stations that perform work for operators operating under a FAR Part 121 continuous airworthiness maintenance program must include a section on how FAR Part 121 Subpart L and the air carrier's manual are to be complied with, how the work is to be performed and that a current copy of the air carrier's manual will be provided.</p>
<p>ORDER 8300.10 VOL. 2 Chapter 165 Dated: August 13, 1993</p>	<p>EVALUATE FAR PART 145 REPAIR STATION'S FACILITIES AND EQUIPMENT</p> <p>11(B) If work is contracted out to a non-certificated person, the certificate holder/applicant is responsible for ensuring that all work is performed in accordance with regulatory requirements.</p>

TRAINING: Air Carrier Requirements	
CURRENT GUIDANCE	TEXT
FLIGHT STANDARDS HANDBOOK BULLETIN (HBB) FOR AIR TRANSPORTATION, HBAT 96-06	<p>OUTSOURCED CREW TRAINING: AUDIT BY OPERATORS</p> <p>This bulletin addresses the issuance of Operations Specifications Paragraph A31 authorizing the use of a self audit program for all Part 121 air carriers and Part 135 air carriers in transition to Part 121, who outsource flight crew training to training providers.</p>
ORDER 8400.10 Volume 3 Chapter 2 Section 2 Page 3-190	<p>WITHDRAWAL OF FINAL APPROVAL OF TRAINING CURRICULUMS</p> <p>349. Each operator is responsible for ensuring that its training curriculums, once they have been granted final approval, continue to provide training in accordance with the conditions under which final approval was granted.</p>
ORDER 8400.10 Volume 6 Chapter 2 Section 17 Page 6-374	<p>TRAINING PROGRAM INSPECTION PRACTICES AND PROCEDURES</p> <p>439G.(4) The inspector shall observe the operator’s quality control program to ensure that training effectiveness is continually monitored and that specific areas or items are corrected when necessary.</p>
ADVISORY CIRCULAR 120-53 Dated: May 13, 1991	<p>CREW QUALIFICATION AND PILOT TYPE RATING REQUIREMENTS FOR TRANSPORT CATEGORY AIRCRAFT</p> <p>9.1.1 FAA responsibilities. FAA has the responsibility for review, approval, and continuing surveillance of individual air carrier programs consistent with this advisory circular and FSB provisions. This applies at both main bases and crew bases and training sites away from the CHDO (e.g., outlying crew bases contract training facilities).</p>
FAA STATEMENT ON INSPECTION POLICY, PERSONNEL Dated: June 18, 1996	<p>Airlines will be required to demonstrate regulatory compliance of their major contract training programs. Training being conducted at each facility employed by the carrier to perform contract training will be reviewed. A review of the “check airman” involvement and on-site oversight being provided by the carrier will be accomplished to ensure that the contractor is providing services that comply with the regulatory requirements levied upon the carrier.</p> <p>The carrier must conduct an audit of the contractor. This audit must demonstrate to the principal inspector that the contractor is capable of performing the contracted work in accordance with the carrier’s approved program.</p>

TRAINING: Air Carrier Requirements	
CURRENT GUIDANCE	TEXT
<p>AFS-1, POLICY MEMORANDUM</p> <p>Dated: June 28, 1996</p>	<p>Air Carriers will now be required to demonstrate the regulatory compliance of each of their major contract training programs. Carriers list all contractors performing training in their operations specifications (OpSpecs).</p> <ol style="list-style-type: none"> 1. By July 15, 1996, the air carrier must provide a current list of contract maintenance and contract training organizations used by the carrier. By August 15, 1996, those current contractors must be listed on the OpSpecs. 2. Effective September 1, 1996, all new contractors must be listed on the OpSpecs. 3. No new contractors will be authorized in OpSpecs after September 1, 1996, without an audit having been completed by the air carrier proposing to use the contractor. A copy of the air carrier's audit report must be submitted to the FAA.
<p>ORDER 8300.10</p> <p>VOL. 2</p> <p>Chapter 70</p> <p>Dated: July 17, 1992</p>	<p>EVALUATE FAR PART 121 MAINTENANCE TRAINING PROGRAM/RECORD</p> <p>11B(3) Technical training may be contracted to another operator, manufacturer, or in the case of a specialized process, to a person knowledgeable in the specialized process. The operator/applicant is responsible for the content and quality of such training.</p> <p>11C Responsibilities for persons other than an operator's employees. FAR Part 121 requires each certificate holder to be primarily responsible for having a training program and ensuring that the training received throughout the operator's system is of equal quality and effectiveness. This covers all persons such as the certificate holder's employees, contract personnel for emergency maintenance and servicing, etc.</p> <p>Section 2, Procedures, 5C(15) Criteria to determine acceptability of contract training to include:</p> <ul style="list-style-type: none"> • Qualifications of instructors • Criteria to establish appropriateness of reference material being taught • Reporting procedures to inform operator of student progress • Criteria to determine adequacy of facilities • Criteria to evaluate contractor's training syllabus <p>5E Observe Operator/Applicant Performing Training. This observation is performed regardless of whether the operator performs the training or</p>

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	contracts with another company.
ADVISORY CIRCULAR 120-55A Dated: August 27, 1993	AIR CARRIER OPERATIONAL APPROVAL AND USE OF TCAS II d. Training Center Approval. Training centers conducting training (e.g., contract training, aircraft manufacturers, etc.) may have TCAS elements of those programs approved if certain other provisions of the advisory circular are met.
ORDER 8400.10 VOL. 3 Chapter 2 Section 2 Page 3-175 Dated: June 16, 1989	TRAINING APPROVAL PROCESS 311.A Training curriculum approvals follow the five-phase general process for approval or acceptance. However, there are no regulatory provisions for Part 121 training to be conducted by training centers or aircraft manufacturers. Certain training centers and aircraft manufacturers, currently have FAA approval to train flight crew members in certain aircraft types of used Part 121 operations. Recent regulatory changes (FAR 142) address this issue.
ORDER 8400.10 VOL. 3 Chapter 3 Section 1 Page 3-371 Dated: August 31, 1990	AIR TRANSPORTATION GROUND INSTRUCTOR 667.A The qualification criteria for air transportation ground instructors is not specified in the FAR's.

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<p>POLICY MEMORANDUM # 54 Dated: December 7, 1984</p>	<p>FAR PART 121 CONTRACT TRAINING POLICY</p> <p>d. In the past, Part 121 training generally has been “in house.” Recently, economic deregulation, which gave rise to a large number of new entrant airlines and the development of advance simulation facilities with capacity in excess of that needed by the host airline.</p> <p>Again, it is important to emphasize that 1) FAA training program approval is extended only to the operator, not to the contractor, and 2) a training arrangement approved for one operator would not automatically be approved, nor necessarily be appropriate, for another.</p> <p>The responsibility remains, as always with the air carrier to comply with the FAR and to provide documentation needed by the POI to ensure the operator is in compliance. Training is one of the primary elements of a safe air carrier operation.</p>
<p>ORDER 8000.49B Dated May 2, 1992</p>	<p>TRAINING CENTER SURVEILLANCE</p> <p>14.b. The surveillance at training centers NOT utilizing an Aircrew Designated Examiner (ADE) program is the responsibility of the district office having geographic responsibility where the center is located. The surveillance of training centers utilizing an ADE program is the responsibility of the CHDO. The district offices should make every possible effort to accommodate work requests received from outside the respective district related to work activity generated by personnel designated under FAR 183.</p>
<p>ORDER 8400.10 VOL. 3 Chapter 3 Section 2 Page 3-387 Dated: December 20, 1994</p>	<p>APPROVAL OF A CHECK AIRMAN TO SERVE MULTIPLE OPERATORS</p> <p>699. This is a standardized method for designating a check airman to serve multiple operators. However the designation of a check airman to serve more than one operator is limited to those cases in which the operators’ aircraft, operating manuals, procedures and checklists are compatible. Designations for a check airman to serve multiple operators is issued on a temporary basis, such as when the operation is originally being introduced or when new equipment is being introduced.</p>
	<p>OTHER</p>

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ORDER 8130.2C	<p>AIRWORTHINESS CERTIFICATION OF AIRCRAFT AND RELATED PRODUCTS</p> <p>This document provides procedures for accomplishing original and recurrent airworthiness certification of aircraft and related approvals. The procedures apply to both Aircraft Certification Manufacturing and Flight Standards Airworthiness Aviation Safety Inspectors; and private persons/organizations delegated authority to issue airworthiness certificates and related approvals.</p>
<p>ADVISORY CIRCULAR 120-60</p> <p>Dated: May 19, 1994</p>	<p>GROUND DE-ICING AND ANTI-ICING PROGRAMS</p> <p>10.C(8) Contractor De-icing. Many certificate holders use parties other than themselves to perform de-icing. The party with whom they reach an agreement to provide de-icing services could be another carrier, a fixed base operator or some other service provider. Training for de-icing services should include the following:</p> <ul style="list-style-type: none"> • An approved contractor training program. • Train-the-trainer program (the carrier trains the contract de-icing personnel or designated trainer).
<p>ORDER 8400.10</p> <p>VOL. 4</p> <p>Chapter 3</p> <p>Section 3</p> <p>Page 4-409</p> <p>Dated: June 30, 1991</p>	<p>APPROVAL OF PERFORMANCE DATA SECTIONS OF CFM's</p> <p>975.(B) Current Industry Practices. There are a wide range of methods for: collecting airport and obstacle data; preparing airport analyses; and, for preparing, publishing and distributing the performance data sections of CFM's. To implement each or all of these functions, operators may either establish a department within the company or contract the work out.</p> <p>Generally, major airlines do more of this process in-house, while smaller operators contract for these services. Some service contractors provide services tailored specifically to Part 121 supplemental and Part 135 on-demand operators.</p>
<p>ORDER 8400.10</p> <p>VOL. 5</p> <p>Chapter 5</p> <p>Section 1</p> <p>Page 5-197</p> <p>Dated: July 28, 1992</p>	<p>DESIGNATED EXAMINER AUTHORITY AND RESPONSIBILITIES</p> <p>357.B(2) The designated examiner's letter of authorization must contain each operator that the designated examiner is allowed to serve.</p>

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<p>ORDER 8400.10</p> <p>VOL. 4</p> <p>Chapter 3</p> <p>Section 4</p> <p>Page 4-435</p> <p>Dated: June 30, 1991</p>	<p>AIRPORT DATA ACQUISITION SYSTEMS</p> <p>997. GENERAL. Most of the data required for flight operations can be obtained by a subscription to a standard government or commercial aeronautical navigation charting service, such as the National Oceanic and Atmospheric Administration (NOAA), the Department of Defense (DOD), or the Jeppesen/Sanderson Company.</p> <p>1001.B Contractors and Commercial Sources. POI's may approve or accept data systems that are operated by a contractor for the operator.</p> <p>1001.B(1) The primary issue in approving a contractor-operated system is the contractor's ability to maintain the required airport surveillance.</p>
<p>POLICY MEMORANDUM # 141</p> <p>Dated: February 27, 1986</p>	<p>The FAA considers CASE an acceptable vendor control and analysis program.</p> <p>While utilizing CASE the airline retains primary responsibility for airworthiness as with any other parts and materials processed through approved vendors/contractors.</p>
<p>FLIGHT STANDARDS HANDBOOK BULLETIN FOR AIRWORTHINESS, HBAW 95-11A</p> <p>Dated: October 13, 1995</p>	<p>COORDINATING AGENCY FOR SUPPLIER EVALUATION (CASE) DELETED VENDOR</p> <p>3. In order to improve communications between air carrier PMI/PAI, the air agency PMI/PAI will disseminate CASE audit results.</p>
<p>ORDER 8300.10</p> <p>VOL. 3</p> <p>Chapter 45</p> <p>Dated: July 24, 1992</p>	<p>SURVEILLANCE OF 121/135 OPERATORS PARTICIPATING IN "COORDINATING AGENCIES FOR SUPPLIER'S EVALUATION" (CASE)</p> <p>5. The purpose of CASE is to conduct audits of various suppliers and vendors through a cooperative effort of the member airlines. These audits are a method for the analysis, control, and acceptability of those vendors supplying parts and maintenance services to member airlines. These CASE audits are found to satisfy the requirements of FAR §§ 121.373 and 135.431.</p>
<p>ORDER 8300.10</p> <p>VOL. 2</p> <p>Chapter 65</p> <p>Dated: July 24, 1992</p>	<p>7.C The use of contract agencies tends to complicate an operator's continuous analysis and surveillance system.</p> <p>7.E When an operator uses a contractor for total maintenance support, the operator is responsible for the continuing analysis and surveillance requirement.</p> <p>Section 2, Procedures, 5(B) Review the Operator/Applicant's Program.</p> <p>When the operator/applicant presents the complete continuing analysis and surveillance program, ensure that the program audits and analyzes</p>

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	<p>the following:</p> <p>Vendor facilities and capabilities.</p>
<p>ORDER 8300.10 VOL. 2 Chapter 84 Dated: June 24, 1992</p>	<p>29(T) Paragraph D90 - Coordinating Agencies for Suppliers Evaluation (CASE)</p> <p>29(T)(1) The certificate holder still maintains the primary responsibility for ensuring the airworthiness of these parts, materials, and services.</p> <p>D90. Coordinating Agencies for Suppliers Evaluation (CASE)</p> <p>The certificate holder is authorized to utilize CASE as a means of qualifying a vendor for services, parts, and materials to satisfy the requirements of Section 121.373 or 135.431.</p> <p>a. CASE activities shall be conducted in accordance with the most current revision of the CASE air carrier section policy and procedures manual and the certificate holder's manual system. Contents of the CASE manual shall not conflict with the FAR or the certificate holder's manual system.</p> <p>b. The certificate holder retains primary responsibility for the airworthiness of parts and material processed through any approved vendor or contractor approved for use by the certificate holder and for services rendered to the certificate holder.</p> <p>c. Should the air carrier section of CASE cease to exist or function or should the certificate holder cease to maintain an active sustaining membership, this authorization is canceled.</p>
<p>ORDER 8300.10 VOL. 2 Chapter 95 Dated: July 24, 1992</p>	<p>EVALUATE FAR PART 121/135 OPERATOR/APPLICANT'S FOR PARTICIPATION IN "COORDINATING AGENCIES FOR SUPPLIER'S EVALUATION" (CASE)</p> <p>5(A)(4) Vendor: An organization that provides overhaul, repair, maintenance, and/or servicing of aircraft, components, or appliances.</p> <p>5(B)(2) The purpose of CASE is to conduct audits of various vendors through a cooperative effort of the member airlines. These audits are a method for analysis, control, and acceptability of the vendors supplying parts and maintenance services to member airlines.</p> <p>5(C) The Current CASE Program. The initial specifications developed by CASE were aimed at audits of repair stations that provide member airlines with components/parts that have been restored, overhauled, or otherwise repaired.</p> <p>5(E)(2) The CASE organization publishes a policy and procedures manual that outlines the program in its entirety, including methods for selecting and training auditors, and evaluation standards for evaluating</p>

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	vendors/suppliers.

APPENDIX E – WORK STATEMENT

PURPOSE

Examine existing Federal regulations and FAA's management of oversight of commercial airlines engaged in substantial outsourcing of maintenance and training functions, as well as the flexibility with which FAA inspection resources can be deployed effectively in response to varied fleet mixes, rapid growth, or other changes by a certificate holder.

As a result of this review, and considering initiatives resulting from Challenge 2000, recommend immediate actions as may be necessary in the following areas:

SCOPE OF WORK

1. REGULATORY REVIEW

- A. Air Carrier (Part 121), Repair Station (Part 145), Training Centers (Part 142), Certification (Part 119) Federal Aviation Regulations (FARs)
 - 1) What is the current regulatory scheme related to contract maintenance? Contract training?
 - 2) What, if any, differences exist between the operator's responsibility for contract services and the operator's responsibility for similar services when conducted "in-house"?
 - 3) What, if any, change should be considered to the regulatory scheme? Should additional limits be placed on: the amount of outsourcing permitted by an operator; controlling the rate of a carrier's growth; the variety of aircraft and aircraft configurations permitted in a carrier's fleet mix?
- B. Guidance Materials
 - 1) What is the current agency guidance, to inspectors and to air carriers, related to the responsibility for and oversight of contract services? Is this guidance consistent with agency guidance for air carriers generally? Is this guidance adequately covered in FAA inspector training programs?
 - 2) What, if any, changes should be considered to agency guidance?
 - 3) Is there sufficient guidance to inspectors on the growth of new entrants? Is additional guidance necessary on the infrastructure, management, and financing systems required to support growth, particularly rapid growth?

- 4) Is the current format for dissemination of guidance to inspectors adequate?

C. Initial DOT/FAA Certification Requirements

- 1) Does the initial certification process have sufficient requirements for operators intending to engage in substantial outsourcing? Utilizing a varied fleet mix? What, if any, changes should be considered?
- 2) Is the existing system of dual certification of new operators by OST and FAA being handled in the most efficient way? Is a sequential (i.e., OST then FAA) rather than a parallel approach preferable, either as a routine procedure or in selected cases? If so, can this be accomplished without imposing undue delays on applicants?
- 3) Should we make more frequent use of OST's current practice placing limits on the number or size of aircraft permitted under a new operator's certificate for economic reasons? Should such limits be placed on existing operator's certificates where warranted by changing circumstances?
- 4) Is the existing coordination of surveillance/monitoring of new operators between OST and FAA sufficient?

2. *RESOURCE ALLOCATION AND CERTIFICATE MANAGEMENT*

A. Staffing Requirements and Workload Distribution

- 1) Are inspector staffing levels adequate and is staff adequately deployed to oversee operators that outsource substantial portions of their operations?
- 2) Do staffing standards reflect the complexity of providing oversight to operators that outsource substantial portions of their operations? Are staffing standards responsive to changes in regulations and oversight requirements?
- 3) Does the agency have a process to identify a point in a carrier's growth when additional resources should be assigned? How does the agency focus resources where most needed?

B. Certificate Management

- 1) Is the availability of FAA inspectors needed to oversee new operators sufficient? If not, what changes should be considered in either staffing levels or the certification process?
- 2) Does the present relationship between the FAA Certificate Management Office (CMO)/Flight Standards District Office (FSDO) and geographic inspectors provide sufficient flexibility for targeting resources and inspections?
- 3) How effectively does the FAA geographic support inspector system work?

- 4) How does the agency presently leverage its resources? Are new strategies warranted?
- 5) How does the agency generally deploy its most experienced and knowledgeable inspectors? What is the experience base of inspectors assigned to new entrant operators vs. established operators?
- 6) How does the agency assist new carriers in implementing industry practices that go beyond the minimums required by the regulations? Should the agency establish "external" incentives for adoption of practices that go beyond the safety minimums?
- 7) How effective is the agency's training which is specifically targeted to meet the needs of all inspector specialties? Are new strategies warranted?

C. Risk Management

1) Operator Safety Indicators

- a) What safety data exists today (i.e., service difficulty reports, accident/incident, enforcement information hotline complaints)? How is it used and disseminated?
- b) Are Safety Performance Analysis Systems (SPAS) and other data bases equipped with the indicators necessary for operators which outsource or grow rapidly? How can such information be disseminated to inspectors not yet on-line with SPAS?
- c) Do National Aviation Safety Inspection Program (NASIPs)/ Regional Aviation Safety Inspection Program (RASIPs) review and disclose factors that may be unique to operators which outsource? Grow rapidly?
- d) How effectively does the FAA communicate safety access data across organization lines?
- e) In what ways will data obtained from FAA/industry safety partnership programs and Flight Operations Quality Assurance (FOQA) initiatives provide measurable safety benefits?

2) Comparative Analysis

How does the agency compare regulatory compliance among operators as a tool in targeting agency resources and in detecting trends within the industry?