

Department of Airports

Staffing Study of Operations and Communications Functions

(Project No. 01-M-01)

This document is the result of a collaboration between the Department of
Airports and the Office of Financial Management & Budget,
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Executive Summary

Palm Beach County operates four public airports, including Palm Beach International Airport, one of three fields in south Florida served by international carriers. For most of the decade of the Nineties, the Department of Airports (department) underwent repeated business contractions in response to loss of scheduled air carriers and general “belt tightening.” By early 2001, Airports management was looking to fill out staffing rosters in the Security and Communications Units of its Operations Section.

In response to a request from department management, the Management and Program Analysis Section conducted this study to examine the staffing requirements in the operations and communications functions and to assess the workload-to-staffing balance among the positions assigned to those activities. This report contains the results of that study, in the form of findings and recommendations. James Godfrey, Senior Management and Operations Consultant, was the lead analyst assigned to this project.

The study found that overall staffing was very close to the levels required by the current operational and security circumstances at the county’s four airports. The addition of one new communications position and revisions to crew compositions on selected work shifts would better balance staffing with workload. The study team came to these conclusions despite the absence of established workload or performance standards for either of the organizational units. In the absence of performance standards by the Federal Aviation Administration or the department itself, the actual performance of these units becomes the *de facto* standard. Provided that that standard does not needlessly expose the county to unacceptable regulatory liability or casualty insurance risks and costs, it should be regarded as adequate, until some other standard is imposed.

The study team makes the following eight recommendations:

- The Security unit should be kept at its current staffing complement;
- The department should adjust the crew sizes on the first and second shifts of the Security unit to three persons each, rather than four persons as at present;
- The department should adjust the crew size on the third shift of the Communications unit to two persons, rather than three persons as at present;
- One additional Communications Specialist position should be added to the Communications unit;

Report Highlights . . .

Our review of staffing of the Security Unit and the Communications Unit at the Department of Airports found:

- ☑ ***The staff and managers of the two units appeared to perform their duties with diligence and efficiency;***
 - ☑ ***In general, the two units are staffed in a manner which is both effective and economizes on expense;***
 - ☑ ***Basic management information for internal controls and forecasting resource requirements is not readily available to unit managers;***
 - ☑ ***Revisions to crew sizes on selected work shifts could lead to additional economies.***
-

- The department should investigate re-design of the Communications Center;
- The department should convert to an automated system for tracking Communications Center call activity;
- The department should use commercially-available shift scheduling software to assist with the scheduling of employees in both the Security and Communications units;
- Management reports dealing with staffing and payroll records should segregate Security unit data from Communications unit data.

In the course of the study, the consulting team encountered a variety of data and regulatory restrictions which may affect the conclusions the report has reached. Principally, the absence of performance standards addressing either operations or communications functions means that one cannot say what specific staffing levels will produce the necessary results to be considered “adequate.” If the department wants a defined level of service from its security or communications programs, it must establish those standards in the future.

Department of Airports: Security and Communications Staffing

A study to examine the staffing requirements for the non-law enforcement security and communications functions of the department and to assess the workload-to-staffing balance of positions assigned to those functions.

The purpose of this report is to determine whether the current staffing levels for security and communications services are appropriate to meet the needs of the Department of Airports (department) with regard to the safety, security and environmental concerns of passengers and employees.

The study focused on identifying the internal and external factors that affect the provision of security and communications services at Palm Beach International Airport (PBI), assessing the resulting impact on staffing requirements, and determining the minimum number of staff necessary to provide appropriate security and communications coverage. Several considerations affected the completion of this study. These included:

- Per Federal Aviation Regulations, section 107.3(e), specific weaknesses or detailed findings regarding security matters uncovered by Federal Aviation Administration (FAA) tests or PBI Operation Agents could not be disclosed in a public document — including management study reports of this sort — to ensure security integrity and prevent such data from being used adversely (Appendix 1).
- Because of differences in statements of work, varying job descriptions, shared responsibilities and incomplete data, survey information on staffing levels from comparably-sized airports proved to be of negligible use.
- County-produced documents for overtime, compensatory time and sick/personal time for both Operations Officers and Communications Specialists were not readily available.
- Summary information on workload (e.g., annual totals, year-to-date totals, simultaneous call incidents, etc.) was not readily available to identify workload trends and make projections.

- Information on actual or expected response times for Operations Officers was not available. Moreover, there are no FAA standards that address this activity.

The methodology used in this study included all of the following:

- A physical inspection of all county airports (PBIA, Lantana, North County and Pahokee) was conducted to better assess overall requirements.
- FAA requirements pertaining to airport operations were reviewed.
- The organizational chart and duties and functions of the Security and Communications staff were examined.
- The relationship between Airport security staff and Sheriff's Office staff assigned to the Airport was examined.
- Overtime, compensatory time and sick/personal time records, when available, were reviewed.
- Past and future headcount projections developed by Airport Operations staff were reviewed and analyzed.
- Comparably-sized airports nationwide were surveyed to determine security and communications practices.

Factual Profile

AIRPORT OVERVIEW

Palm Beach International Airport (PBIA) is located in eastern Palm Beach County approximately three miles southwest of the central business district of West Palm Beach. The airport is located on a 1,866-acre site surrounded by residential and commercial development. It has a 10,000-foot primary runway, a 6,930-foot crosswind runway, and a 3,152-foot general aviation runway. The total number of passengers served by the airport for the twelve months ending December 1999 was 5,742,634, and total cargo for the same time period was 25,503 tons. In addition to the terminal building and its associated parking garages (1,706,108 square feet), other landside facilities occupying the north side of the airport include rental car agencies, a fuel farm, cargo facilities, overflow parking, a flight kitchen, a water treatment and storage plant, and a maintenance warehouse. The airport's Communications Center is located on the second floor of the terminal building.

In addition to the main PBIA facility, the Department of Airports also oversees activities for the following three general aviation facilities:

- Palm Beach County Park Airport (Lantana) is located 10 miles from PBI (a 20 minute drive) on a 630-acre site. This facility, opened in 1945 to civilian use, includes a terminal building, hangars, office space, a fuel farm, and three runways. The facility handled 139,725 flights in 1999.
- Palm Beach County Glades Airport (Pahokee) is 43 miles west of PBI (a one hour drive) and is situated on a 243-acre site. This facility, which opened in 1949, includes a terminal building, hangars, office space, a fuel farm, and a single runway. A total of 10,000 flights used the airport in 1999.
- North Palm Beach County General Aviation Airport is 20 miles northwest of PBI (a 30 minute drive) and is situated on a 1,832-acre site. This facility, which opened in 1994, includes a terminal building (6,757 square feet), hangars, office facilities, a water treatment facility, and three runways. The airport handled 58,420 flights in 1999.

The number of passengers and flights at PBI varies widely according to time of day.

Although PBI operates continuously around the clock, the number of passengers and flights varies widely according to the time of day. A random sample of flights at PBI during March 2000 indicates that a total of 22,073 flights (712 average flights per day) was logged for the month, including commercial, general aviation and miscellaneous (principally military) flights (Appendix 2). Using scheduled commercial flight information for December 2000 (Appendix 3), which includes time of day information, the study consultant calculated the distribution of the March flights for typical morning, evening and nighttime 8-hour shifts. The results are shown in the table below. The graph at the top of page 6 illustrates this breakdown by time of day and type of flight.

TABLE 1

Flight Activity at Palm Beach International Airport Occurs Predominately During Daytime Hours

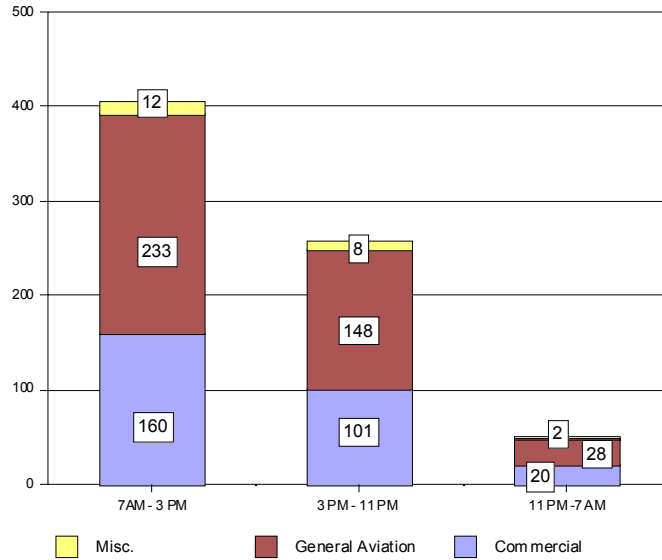
Shift	No. of Flights	Daily Distribution
7:00 a.m. - 3:00 p.m.	405	57%
3:00 p.m. - 11:00 p.m.	257	36%
11:00 p.m. - 7:00 a.m.	50	7%
Total	712	100%

Source: OFMB calculation based on PBI flight activity data

As shown in the organization chart at the bottom of page 6, the department is organized into four divisions. The largest of these, the Operations & Maintenance Division, is responsible for providing security and

FIGURE 1

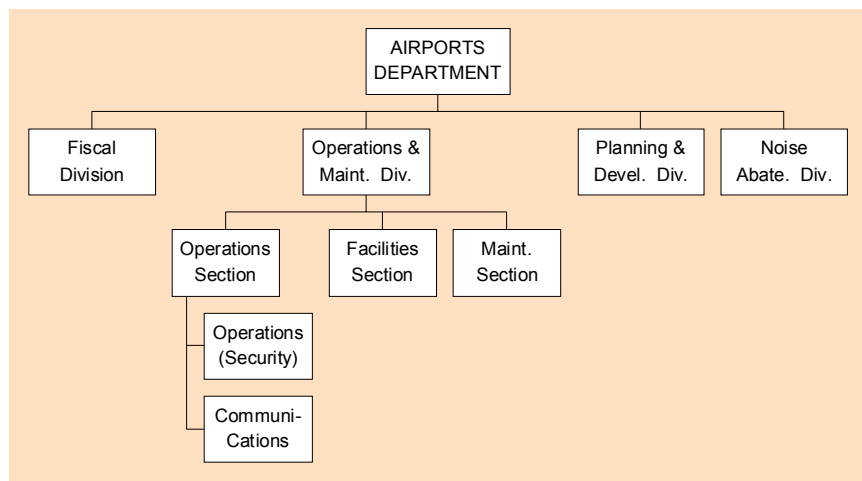
PBIA Flights by Time of Day



communications services through its Operations Section. An expanded table of organization is included as Appendix 4.

FIGURE 2

Existing Organization Chart of the Palm Beach County Department of Airports



The Operations Section operates under the guidelines of Federal Aviation Regulations Part 107–*Airport Security*, Part 108–*Airplane Operator Security*, and Part 139–*Land Airports Serving Certain Air Carriers* (Appendix 5). In addition, Article IV–*Airport Security* of Appendix B to the Palm Beach County Code of Laws and Ordinances, further defines the responsibilities of the Operations Section (Appendix 6).

Two factors are expected to significantly impact the operations at PBI in the near future, particularly in the security and communications areas. Airport operations management believes that expanded FAA requirements and additional security tests can be expected.¹ In addition, Southwest Airlines, new to PBI, is expected to add 13 flights per day beginning in January of 2001.² Currently, PBI accommodates 72 flights per day, with Southwest Airlines’ traffic translating into a projected 10% to 15% increase in passengers, according to the airport’s finance director.

AIRPORT SECURITY

Overall airport security is provided by two groups: 1) the Sheriff’s Office which has a \$4.5 million annual contract with the department; and 2) a unit of the department’s Operations Section (referred to throughout this report as the “Security Unit”) consisting of the following twelve employees:

- 3 – Operations Supervisors
- 9 – Operations Officers

This staffing complement has been in effect since September 1996. The Security Unit reports to the Airport Operations Manager.

Although there is some overlap between Sheriff’s Office personnel and Airport staff with regard to the security function, Sheriff’s personnel focus primarily on law enforcement duties and criminal activity (i.e., activities that may result in making arrests). They do not typically interact with the airlines in day-to-day activities, whereas airport security staff routinely does.

Operations Officers are responsible for a variety of tasks involving the safety, security and environment of Palm Beach International Airport and the three general aviation airports. Officers typically visit each general aviation airport once a month and in response to emergency (“Alert 3”) situations, such as a crash. A general outline of duties includes:

- Monitoring all gates, doors, trash cans, traffic, runways, ramps, taxiways, contractors, vehicles, escalators, environment, leases;
- Monitoring overall facility cleanliness; and

¹ Internal memo dated October 21, 2000. [See Appendix 7]

² Company press release, dated October 19, 2000. [See Appendix 8]

- Responding to and reporting all accidents and incidents.

A job description and detailed statement of work developed by the study consultant in discussions with airport staff are included for additional reference as Appendix 9A and 9B, respectively.

In order to provide security coverage at PBI/A continuously around the clock, the Security Unit is organized into two 4-person crews and one 1-person crew assigned to cover four zones. This staffing configuration is tabulated on the chart below. Because of the historically low volume of flights and passengers during the nighttime hours, only one Operations Officer is assigned to the third shift. Supervisors are assigned only to the first and second shifts, typically serving as roving agents; however, they remain on-call for the third shift.

TABLE 2

**Schedule of Personnel Deployments by Work Shift
(Security Unit)**

Shift	Scheduled Hours	Assigned Staff	Zone Deployment
1	6:30 a.m. – 2:30 p.m.	1 Supervisor 3 Officers	<ul style="list-style-type: none"> • One agent to airside area including runways, taxiways and secured areas used by aircraft (<i>Zone 1</i>) and land-side area including access roadways and parking facilities (<i>Zone 4</i>) • One agent at west end of Terminal A&B (<i>Zone 2</i>) • One agent at east end of Terminal C (<i>Zone 3</i>) • One roving agent
2	2:30 p.m. – 10:30 p.m.	1 Supervisor 3 Officers	Deployed same as Shift 1
3	10:30 p.m. – 6:30 a.m.	1 Officer	One agent covers all 4 zones

Source: PBC Department of Airports

All affected security personnel work standard 8-hour shifts, five days per week. To meet the department’s obligation for continuous security staffing 7 days per week at PBI/A, a rotating shift schedule has been employed which utilizes a 28-day cycle. After 28 days, each employee listed on the duty schedule drops down one position on the schedule and the employee last on the schedule “rotates” to the top of the schedule. This ensures that each employee works all shifts in a predictable and equitable fashion. In addition to a rotating shift, a “swing” shift is also used on the second and third shifts. This means that an employee assigned to the second shift will forego his normal shift and “swing” to the third shift when there is a vacancy on that shift due to the absence of a

scheduled employee (e.g., the employee’s day off). Appendix 10 depicts a sample shift schedule currently used.

Attempts to maintain the shift staffing described above with existing personnel have also included mandatory overtime (usually in the form of requiring employees to work double shifts) which, according to Operations Section staff, causes fatigue and diminishes efficiency. Also, the use of vacation time has occasionally been denied, causing morale issues, according to the staff.

TABLE 3

**History of Overtime Usage by Security Unit
(FY 1998 – FY 2000)**

Year	Amount Spent	No. of Hours O/T	Overtime FTE's
1998	\$63,345	3,075	1.5
1999	\$69,259	3,263	1.6
2000	\$61,149	2,733	1.3

Source: OFMB calculation from PBC Payroll Report No. ZO0T903

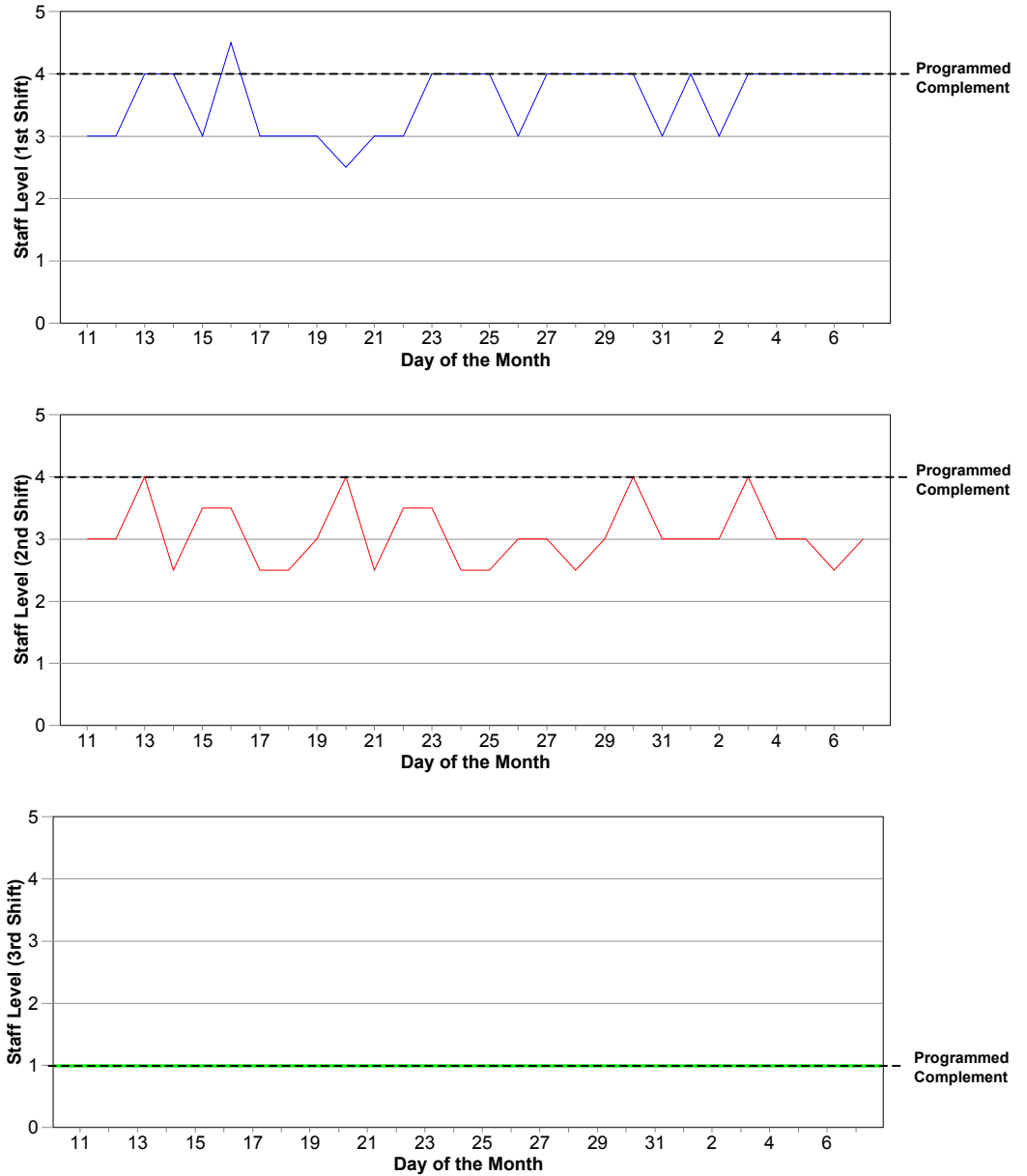
Notwithstanding these measures, the Security Unit reportedly regularly falls short of meeting its intended staffing coverage. The graphs on page 10 compare actual staffing complement with programmed staffing complement for each of the three shifts, over a typical 28-day period last March-April.

As can be seen from these graphs, to varying degrees, the first and second shifts fall short of their programmed staffing complement much of the time. During the example 28-day cycle depicted in this series of charts, the first shift was at full strength on sixteen days (57% of the time) while the second shift was fully staffed on four days (14%). The third shift achieved its programmed staffing coverage 100% of the time.

To better understand why four zones are utilized, a diagram of the terminal layout is included with distances of principal structures (Appendix 11). The longest distance to cover is 2,108 feet from one end of Concourse B to the other end of Concourse C. This distance can be covered in approximately 10 minutes at an average walking speed with average passenger congestion (based on measurements by the study consultant). In the event of an incident, deployment of officers in the east and west of the terminal and “sharing” responsibility for the terminal’s main structure of three levels (647 feet each) should permit a response time well under the 10 minutes taken by the consultant to cover the entire area, particularly because Operations Officers

FIGURE 3

**Comparison of Actual-to-Programmed
Manpower Complements by Work Shift
(Sample 28-Day Period)**



can utilize routes not accessible to the public. The zone deployment concept also permits simultaneous incidents to occur at multiple locations in the terminal (e.g., a door breach in Concourse B and a medical situation in Concourse C) without a break in security coverage, under typical conditions.

In order to assess the significance of simultaneous incidents as a factor affecting security coverage, the study consultant reviewed all 146 incident reports contained in the Communications Log for December 2000. On four occasions during that month, two incidents occurred simultaneously; on a fifth occasion, three simultaneous incidents were recorded. (See Appendix 12.)

Despite the department’s efforts to provide adequate security coverage for the airports, PBI A has been cited for security-related deficiencies. Under Title 49, Section 46301 of the United States Code, commercial airports are subject to civil penalties for violations of Federal Aviation Regulations (FAR). In the past eight months, three such penalties involving security issues have been assessed against PBI A:

Case No.	Date	Violation	Fine
2000S0740152	July 24, 2000	FAR §107.13	\$9,000
1998S0740178	July 24, 2000	FAR §107.3	2,000
1999S0740301	June 12, 2000	FAR §§107.13, 107.3	749

Source: PBC Department of Airports

As previously indicated in this report, expanded Federal Aviation Administration requirements and additional security tests are expected.

AIRPORT COMMUNICATIONS

Airport communications are provided by a unit of the Airport’s Operations Section (referred to throughout this report as the “Communications Unit”), staffed by the following thirteen positions:

- 1 – Communications Supervisor
- 12 – Communications Specialists

This staffing complement has been in effect since September of 1991. The Communications Unit reports to the Airports Operations Manager.

The communications function at the Airport covers two distinct activities: 1) airport communications; and 2) dispatch of Airport Rescue Fire Fighter (ARFF) services. A general outline of airport communications duties includes:

- Receiving and responding to both internal calls (e.g., courtesy phones) and external calls for information and assistance;
- Making all non-airline-related pages of parties in the Airport;
- Monitoring security system components, including closed circuit television and door status indicators, and sending necessary response personnel as appropriate; and
- Receiving and responding to radio communications for security or maintenance calls.

A general outline of ARFF-related duties includes:

- Dispatching fire rescue emergency services using a Computer Aided Dispatch (CAD) system;
- Monitoring and logging all CAD calls and non-emergency fire rescue activities (e.g., training, escorts on airside of terminal, etc.);
- Acting as a point of contact with the airport tower, the County Emergency Operations Center (EOC) and County Fire/Rescue Central Dispatch; and
- Daily checking of the fire alarm system.

Both sets of duties are included in the basic job responsibility of the Communications Specialist position. A job description and a detailed statement of work developed by the study consultant in discussions with Airport staff are included for additional reference as Appendix 13A and 13B, respectively.

The Communications Unit operates out of the Airport's Communications Center. The Center is physically divided into two separate work areas, one to accommodate communications and the other to accommodate dispatch services. The communications activities are located on the west side of the Communications Center. This area contains two workstations for answering and responding to calls. In addition, there are sixteen television monitors (eight per work station) that display closed circuit video feeds and three computer monitors, one to display security alarm data such as door breeches, and two to display flight information. A computer printer, activated by door breeches and other sensor-triggered events requiring action by the Communications staff, is located across the room approximately 8 feet from the nearest workstation.

The fire dispatch area is located on the east side of the Center. It consists of a narrow aisle approximately fifteen feet in length, with an incident location display panel on the interior side and dispatch equipment on the exterior side. The equipment includes two CAD monitors and keypads, and a monitor for an airside exit gate. The two CAD monitors, which are separated by various radio and telephone communications equipment, are approximately six feet apart at either end of the aisle. The current layout of the Communications Center work areas is depicted in Appendix 14.

The Communications Unit operates continuously, around the clock. It is organized into three 3-person crews assigned to three 8-hour shifts in the following configurations:

TABLE 4

**Schedule of Personnel Deployments by Work Shift
(Communications Section)**

Shift	Scheduled Hours	Assigned Staff	Zone Deployment
1	7:00 a.m. – 3:00 p.m.	3 Specialists	<ul style="list-style-type: none"> • Two positions in the communications area • One position in the dispatch area
2	3:00 p.m. – 11:00 p.m.	3 Specialists	Deployed same as Shift 1
3	11:00 p.m. – 7:00 a.m.	3 Specialists	Deployed same as Shift 1

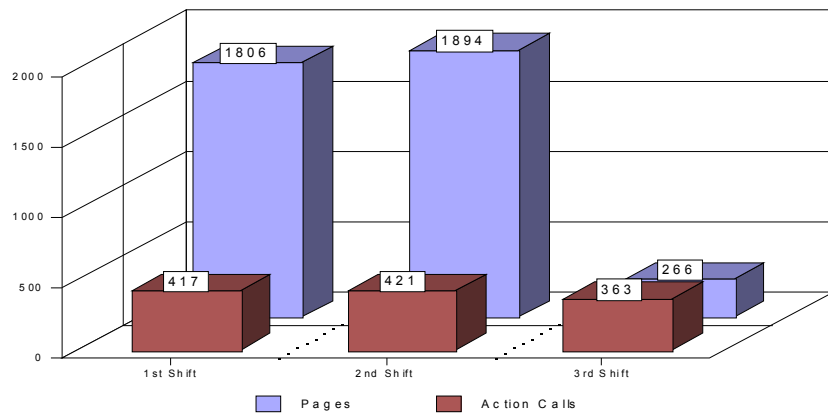
Source: PBC Department of Airports

As this deployment schedule shows, two positions are stationed in the communications area and one in the dispatch area at all times. The Communications Supervisor is typically not involved with actual dispatch and communications activities due to involvement in meetings, scheduling duties, preparing reports, and liaison responsibilities with other County departments (e.g., Fire-Rescue).

According to the Communications Supervisor, two Communications Specialists are needed in the communications area due to the amount of telephone and radio calls, and for relief coverage during lunch and rest breaks. The graph below charts communications activity by shift during the month of February 2000, and compares the number of “action calls” requiring a response by security personnel, Sheriff’s employees, maintenance staff, and others, with

FIGURE 4

Communications Activity by Work Shift



Source: OFMB calculations from PBI A Communications Center logs. Only calls contained in these logs are included.

the number of paging calls. As the chart shows, while the number of pages decreases significantly during the third shift, the number of action calls remains relatively constant across all three shifts.

All Communications personnel are assigned to work standard 8-hour shifts, five days per week. As with the Security Unit, the need for a full-time Communications Center has required the department to resort to various weekend relief schedules. It accomplishes this by means of a rotating 28-day shift cycle in a similar manner as previously described for the Security Unit. Appendix 16 depicts a sample of the rotating shift schedule currently used for the Communications Unit. Attempts to maintain the desired coverage with existing personnel have included mandatory overtime to staff the evening shift. This means that seven days out of 28, a Communications Specialist scheduled for the day shift works an additional four hours to cover the first half of the evening shift, resulting in a 12-hour work day, while another Communications Specialist scheduled for the midnight shift works the other half of the evening shift prior to beginning the midnight shift (also a 12-hour work day).

TABLE 5

**History of Overtime Usage by Communications Unit
(FY 1998 – FY 2000)**

Year	Amount Spent	No. of Hours O/T	Overtime FTE's
1998	\$46,986	2,865	1.4
1999	\$53,603	3,075	1.5
2000	\$45,204	2,506	1.2

Source: OFMB calculation from PBC Payroll Report No. ZOOT903

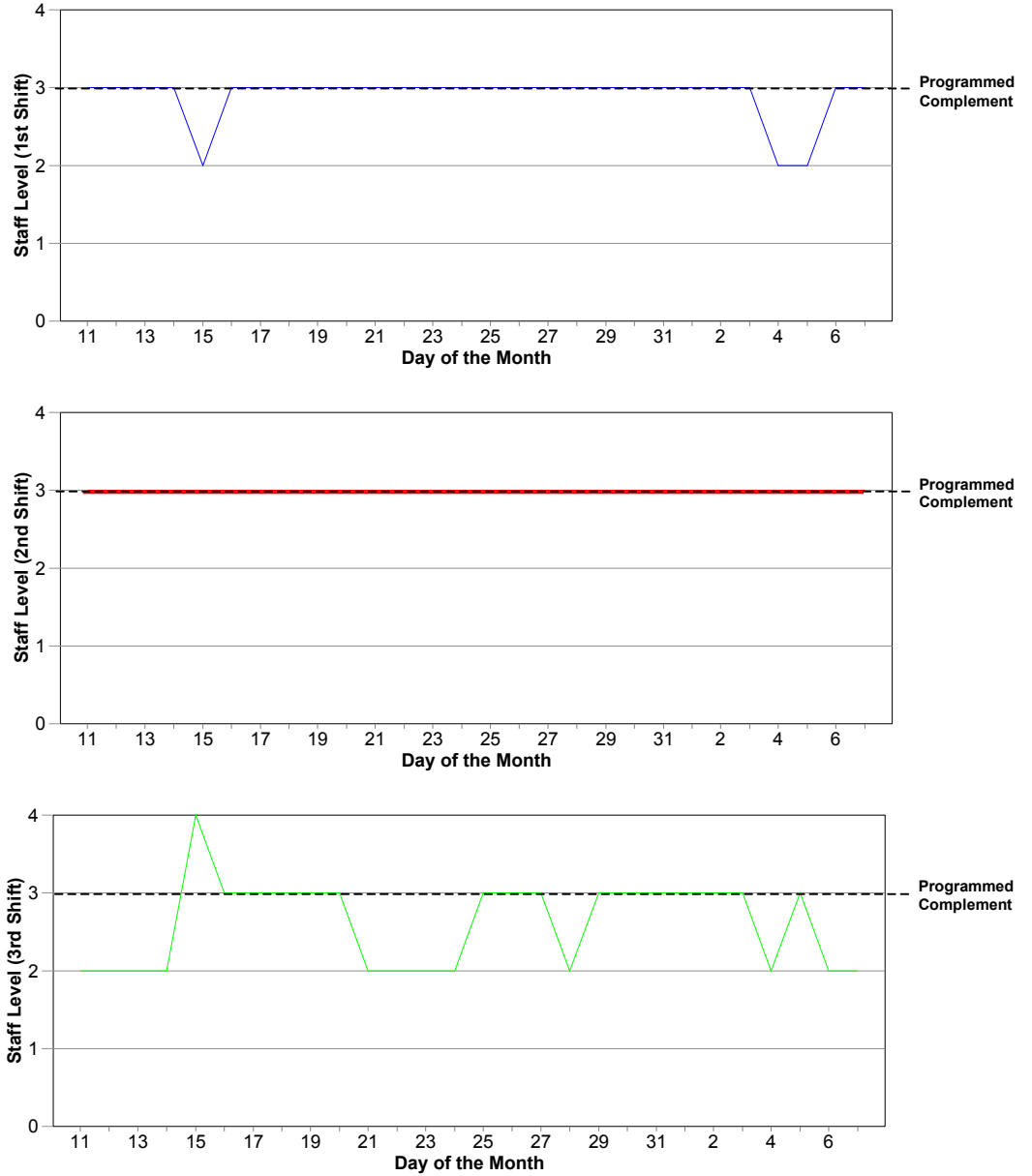
Mandatory overtime, denied vacation and the supervisor “filling in” have not resulted in the desired coverage, according to the Communications Supervisor. Short-handed shifts reportedly regularly occur.

The graphs on page 15 compare the actual staffing complement with the programmed staffing complement for each of the three work shifts, over a typical 28-day period last March-April. As can be seen from these graphs, the Communications Unit has generally been able to maintain its programmed staffing strength of three positions for the first and second shifts.³ The third shift met its programmed staffing coverage slightly more than half of the time (16 of 28 shifts).

³ Of the 56 day and evening shifts during the sample reporting period, only 3 shifts (5.4%) operated short-handed.

FIGURE 5

**Comparison of Actual-to-Programmed
Manpower Complements by Work Shift
(Sample 28-Day Period)**



RECORD KEEPING

County payroll reports for overtime, compensatory time, and sick leave and personal leave time were not readily available to the study team. Computer

Management information reports are often not made available to operational managers, and some basic operational data are not collected at all.

spreadsheets are produced in some areas to track overtime (and other issues), but regular payroll reports are apparently not requested by, nor supplied to, operational-level managers for management information or audit purposes.

Workload information for both security and communications activities was not readily available to identify workload trends, make projections, or evaluate the department's staffing decisions. When data was available, it was often necessary for the study consultant to first manually summarize detailed and voluminous records in order for it to be meaningful. Simultaneous call incidents were a case in point. In other cases, basic data are not collected in any form, and so were not available. Inbound and outbound telephone call volume through the Communications Center is an example.

AIRPORT COMPARISONS

In order to identify staffing practices among similarly sized airports around the country, the study consultant surveyed sixteen airports concerning security and communications functions. Differences in work approach, varying job descriptions, shared responsibilities, and incomplete responses (among others), prevent meaningful quantitative conclusions from being drawn. This data has been tabulated in Appendix 17A and 17B, and is included for reference only.

Findings and Recommendations

This part of the report is divided into three main sections—General Findings, Recommendations, and Implementation. As appropriate, analyses of the issues are included in the first two of these sections. We begin with a summary of the essential conclusions reached by the study team as a result of its work on behalf of the department.

GENERAL FINDINGS

The preceding sections of this report have described the existing organization, operation and staffing of the Airports Security Unit and Communications Unit. Through a process of extensive on-site field observations and interviews with affected employees, the study team offers its assessment with respect to the utilization of staff resources in the two units. The essential conclusions we have reached are that: 1) at all times during the study, the staff and managers of the two units appeared to perform their duties with diligence and efficiency; 2) in general, the two units are staffed in a manner which is both effective and economizes on public expense; and 3) basic management information for internal controls and forecasting resource requirements is not readily available to unit managers. The following specific findings describe the study team's conclusions in greater detail, and are the bases for recommendations that follow later in the next section.

The study team found no evidence of security deficiencies resulting from understaffing. The level of security appears adequate for the current circumstances

The security needs of the airports are influenced by a number of factors:

- Physical layout of the facilities
- Volume of aircraft traffic
- Level of incident activity
- Internal and external performance standards

The facilities at PBI are divided into four geographic security zones as described earlier. Each Security Officer covers one or more assigned areas, and supervisors serve as roving agents wherever they are needed. For most of the day, this arrangement permits security personnel to cover their assigned zones and still respond to incidents in well under 10 minutes.

Although PBI operates on a 24-hour basis, more than 90% of all aircraft traffic occurs during the first two work shifts; less than 10% of all traffic takes place during the third shift. The staffing deployment of security personnel conforms to that general pattern.

Whenever designated incidents occur at the airport, security personnel are typically dispatched to the scene. An examination of how frequently simultaneous incidents occur (which could delay a response) reveals that such conflicts occur at a negligible rate, and would not generally be grounds for workload-related staffing increases.

The absence of established performance indicators and workload standards means that actual performance is the de facto work standard.

Federal Aviation Regulations cover a wide variety of requirements for the operations of commercial airports. However, neither regulatory agencies nor the Department of Airports itself has established workload standards for security personnel regarding response times to incidents.⁴ In the absence of imposed performance standards, the actual performance of the Security Unit becomes the *de facto* standard. Provided that standard does not needlessly expose the county to unacceptable liability risks and costs, it should be regarded as adequate, until such time as another standard is imposed.⁵

A minimum of two persons is required on each Communications shift, and the amount of call activity on the first and second shifts justifies three persons each

Employees at the Communications Center conduct two distinct activities, and the facility is designed to segregate those functions to some degree. For that

⁴ Indeed, the department does not even track response time data in any systematic manner for use as a workload indicator or resource planner.

⁵ The study team found no indication of the sort that might suggest the presence of a heightened liability attributable to security understaffing, *viz.*, large numbers of successful lawsuits or runaway casualty insurance premium increases.

reason, the department regularly schedules employees to attend to each of those functions separately, except for lunch and rest break relief coverage. Based on data supplied by the department, call activity is materially greater during the first and second shifts of the day, falling by two-thirds during the nighttime hours.

Dependence on the use of overtime to staff the second shift of the Communications Unit is not an effective long-term strategy

The study consultant heard from both Communications Center employees and supervisors that excessive use of overtime has contributed to morale problems and may even compromise performance through worker fatigue.

The operational efficiency of the communications functions is hindered by the physical layout of the Communications Center

The current layout of the Center forces CAD operators to “wheel” their chairs up and down the aisle in order to view two monitors and enter data at two keyboards. Similarly, the communications consoles are physically separated from a printer which alerts operators to various sensor-triggered events requiring a response. Ergonomics, too, suffer inasmuch as the communications operators are seated with their backs to a bank of video screens that they are required to monitor.

The present manual system for logging Communications Center call activity is inadequate

The requirement for operators to manually keep a record of call activity produces data which are both incomplete and not consistent from one operator to the next. During the study consultant’s on-site field observations, numerous calls went unrecorded in the log with no apparent logic. As a result, potentially valuable management information for budget planning and other resource forecasting, staff scheduling, and internal controls is not reliable.

Shift scheduling is cumbersome and time-consuming

The use of manual shift scheduling for employees of the Operations Section is understandable, given the relatively small number of workers involved. Nevertheless, there is evidence that that approach is needlessly cumbersome, and limits supervisors’ ability to rapidly respond to changes which affect shift coverage. Moreover, employees repeatedly commented to the study consultant that schedule changes regularly occur with little advance notice, providing no real ability to plan ahead.

Management reporting information for workload tracking, internal control, and resource planning is inadequate or not distributed at all to operational administrators

The study team had considerable difficulty finding financial, staffing, and workload data related to both the Security and Communications units. In

some instances, those data were not collected by the department in any form. In other cases, voluminous amounts of raw data first had to be manually summarized in order to be useful. Similarly, some reports consolidate data in a manner which makes it tedious to separate the data belonging to one unit from that of the other unit. Finally, reports that should be made available to operational managers have not routinely been disseminated for their review.

RECOMMENDATIONS

Recommendation 1: It is recommended that the Security unit be kept at its current staffing complement

As the graphs on page 10 of the report show, first shift coverage of all four security zones at PBI was, in fact, accomplished with three or fewer security personnel approximately 43% of the time during the sample 28-day period; second shift coverage was provided with three or fewer staff 71% of the time. During the third shift, one security officer alone covered all four zones, which is consistent with the much lighter volume of airport traffic during this time period.

Recommendation 2: It is recommended that the department adjust the crew size on the first and second shifts of the Security unit to three persons each, rather than four persons as at present

This configuration would conform more closely to the actual experience of the unit during the first and second shifts than does a crew size of four. All three staff should continue to be assigned to the existing four geographic coverage zones. Such a change should immediately help relieve overtime costs to a noticeable degree.

Recommendation 3: It is recommended that the department adjust the crew size on the third shift of the Communications unit to two persons, rather than three persons as at present

The reduced call activity and airport traffic experienced during the nighttime hours suggest there is no need for the higher number of employees on the third shift. On-site field observations by the study consultant verified that a two-person crew was readily able to respond timely throughout the third shift, even handling added activity associated with scheduled operational practice drills on two occasions during the night.⁶

Recommendation 4: It is recommended that one additional Communications Specialist position be added to the Communications unit

In order to meet the recommended crew complements of 3/3/2 on the three daily shifts, while also eliminating the periodic use of overtime to fund

⁶ Details of the consultant's observations are contained in Appendix 18.

overlapping 12-hour shifts, one additional Communications Specialist is required. The analysis behind this recommendation takes into consideration the need to staff 7-days per week, not just five days. It also accounts for lost productive time for sick leave and vacation periods of the workforce as a whole. Thus, to staff each one of the 8 recommended posts (3 each on the first and second shifts and 2 on the third shift) requires 1.6 full-time equivalent positions, for a total complement of 12.8 positions. At present, the Communications Unit has 12 authorized Specialist positions. The addition of one more Specialist would satisfy this staffing requirement.

The combination of recommendation numbers 3 and 4 should immediately relieve significant amounts of overtime, estimated at approximately 728 hours per year.

Recommendation 5: It is recommended that the department investigate re-design of the Communications Center

Workspace layout in the Center can be improved with better ergonomic design and display panel and workstation reconfiguration.

Recommendation 6: It is recommended that the department convert to an automated system for tracking call activity in the Communications Center

There are numerous beneficial reasons to track call activity, among them cost containment, workload levels, distribution by type of call and hour of the day, ratio of inbound-to-outbound calls, minimization of personal usage, and the like. Most call centers with which we are familiar make use of equipment for just such reasons. The department should investigate, with a view toward installing such a system in the Communications Center.

Recommendation 7: It is recommended that the department use commercially available shift scheduling software to assist with the scheduling of employees in both the Security and Communications units

Various software products are available at nominal cost to assist with the tasks of scheduling around-the-clock operations. This software provides the capability to develop scheduling alternatives, such as maximizing 5-day on/2-day off combinations, or showing the impact of assigning employees to preferred shifts, and so on. In addition, longer-range schedules such as semi-annual and annual schedules can readily be generated so that employees can plan their personal schedules accordingly.

Recommendation 8: It is recommended that management reports dealing with staffing and payroll records segregate Security and Communications data

Current payroll and staffing reports consolidate Security and Communications data. This makes it unnecessarily tedious and time-consuming to separately

review the operational histories of these functions, and to base management decisions on. Payroll and staffing reports should segregate the two functions, rather than consolidating them as at present. Such segregation can be initiated by making a request to the Clerk’s Finance Department.

OTHER CONSIDERATIONS

In the course of the study, the consultant encountered a variety of data and regulatory restrictions that may affect the conclusions the report has reached. Principally, the absence of performance standards addressing either security or communications functions means that one cannot say what specific staffing levels will produce the necessary results to be considered “adequate.” If the department wants a defined level of service from its security or communications programs, it must establish those standards in the future.

The consulting team considered alternative staffing configurations before settling on the recommendations described above. Several of the alternatives are included in Appendix 19 (Security) and Appendix 20 (Communications) for information.

IMPLEMENTATION

This final section of the report contains a suggested plan for implementation of study recommendations. Where appropriate, it also contains an estimate of the costs and benefits associated with the individual recommendations. Some recommendations have cost implications; others result in cost savings. Still others represent opportunities to improve operational effectiveness or enhance service levels. Each recommendation is re-stated in Table 6 below, along with a summary of the estimated costs and/or savings, as well as anticipated service impacts. The recommendations are listed in the same order as they were discussed earlier in the report.

TABLE 6

**Suggested Plan for the Implementation
of Study Recommendations**

Recommendation	0-3 Months	3-6 Months	6-12 Months	Implementation Responsibility	Comments
1. Keep Security unit at current staff				N/A	Would better conform to current staffing and activity patterns
2. Reduce crew size on 1st and 2nd shifts of Security unit	●			Operations Manager	1. Security zone assignments remain as they are 2. Estimated overtime savings: \$27,000
3. Reduce crew size on 2nd shift of	●			Operations Manager	Would conform to current staffing and activity levels

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Recommendation	0-3 Months	3-6 Months	6-12 Months	Implementation Responsibility	Comments
on 3rd shift of Communications unit					activity levels
4. Add new Communications Specialist position	●	●	●	Operations Manager	<ol style="list-style-type: none"> 1. Estimated cost: \$31,000 2. Estimated overtime savings: \$27,000 3. Timing depends on budget calendar and recruitment schedule
5. Redesign Communications Center	●	●	●	Operations Manager	<ol style="list-style-type: none"> 1. Improve productivity 2. Reduce employee fatigue 3. Unknown cost impact 4. Timing may depend on budget approval
6. Automate call tracking	●	●		Operations Manager	<ol style="list-style-type: none"> 1. Cost containment 2. Reduce personal usage 3. Improve workload & staffing forecasts 4. Estimated cost: \$3,000
7. Automate shift scheduling	●	●		Operations Manager	<ol style="list-style-type: none"> 1. Improve staffing forecasts 2. Permit employees to plan their time 3. Estimated cost: \$1,000
8. Track Security, Communications records in separate payroll, staffing reports	●			Operations Manager	<ol style="list-style-type: none"> 1. Cost containment 2. Improve workload, budget & staffing forecasts