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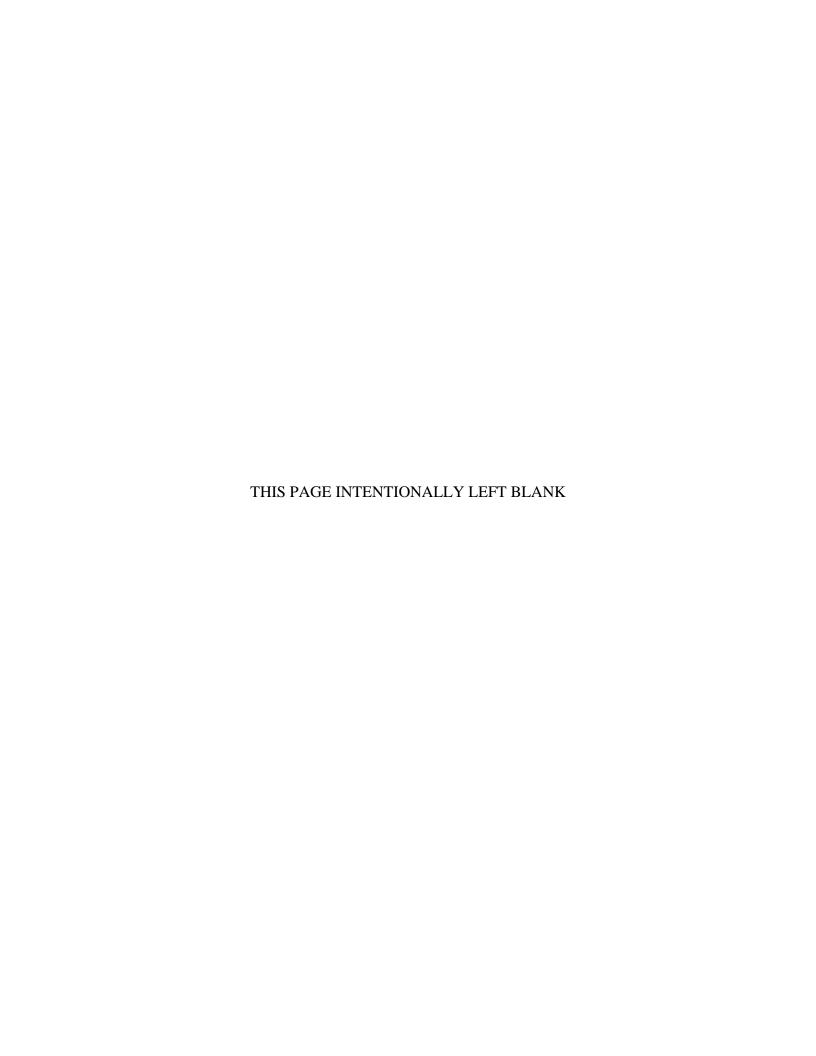

MBA PROFESSIONAL REPORT

Estimating the Total Cost of a Personnel Security Clearance

By: Maurice Cullen
                    June 2007

Advisors: Joseph G. San Miguel
                    Howard Timm

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The purpose of this MBA project was to identify, classify, and summarize elements of the total cost of human, physical, and financial resources used in the Personnel Security system.   This project was conducted at the request of the Defense Personnel Security Research Center. Costs associated with the Personnel Security Clearance system were estimated, and areas for potential cost avoidance were identified. Activity-based Costing was used to help identify time-related costs that are often unclear and unbudgeted under the current process. The findings indicate that time-related costs were several times higher than fees charged per investigation.

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**ESTIMATING THE TOTAL COST OF A
PERSONNEL SECURITY CLEARANCE**

Maurice G. Cullen, Major, United States Air Force

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

**NAVAL POSTGRADUATE SCHOOL
June 2007**

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ESTIMATING THE TOTAL COST OF
A PERSONNEL SECURITY CLEARANCE

ABSTRACT

The purpose of this MBA project was to identify, classify, and summarize elements of the total cost of human, physical, and financial resources used in the Personnel Security system.   This project was conducted at the request of the Defense Personnel Security Research Center.   Costs associated with the Personnel Security Clearance system were estimated, and areas for potential cost avoidance were identified. Activity-based Costing was used to help identify time-related costs that are often unclear and unbudgeted under the current process. The findings indicate that time-related costs were several times higher than fees charged per investigation.

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I.   INTRODUCTION

A.   OBJECTIVE

The primary objective of this project is to identify and document personnel security clearance process costs not typically included in estimates of the total cost of a program. All major government procurement regulations require that a cost estimate be established to ensure knowledge of what is to be bought, how much it will cost, and, ultimately, whether the benefits of the program are worth committing to the initial and future outlays (Defense Acquisition University, 2004).

A review of current costing data available for the Department of Defense personnel security program indicates that certain costs are not typically included, such as the time spent by individuals completing and processing the required security forms, talking to investigators, checking on clearance status, and performing less critical tasks that do not require the requested clearances. When employees and contractors spend time on these types of activities during work hours, they are not working on the primary duties for which they were hired. Given that approximately 2.5 million people currently hold or are seeking Department of Defense security clearances, the impact of that lost productivity is not trivial. In addition, when the costs of certain program elements are not taken into consideration, it is less likely that the appropriate level of consideration will be devoted to assessing how those expenses could and should be reduced.

Increased knowledge of the full range of activities associated with obtaining and maintaining security clearances could help determine the full cost of a program. Certain costs associated with the personnel security system are relatively easy to identify and document, such as the cost charged by the Office of Personnel Management (OPM) for background investigations and the annual budgets for support costs at OPM as well as the adjudicative facilities. However, costs assumed by agencies and contractors — supported in the form of manpower used to maintain clearances and resources lost while waiting for clearances — have not been documented.

B. SECURITY CLEARANCE DEFINED

A security clearance serves as the authorization for access to classified information. According to a TAOnline.com article (Transition Assistance Online, an e-recruiting site for job seekers from the military) and recent Government Accountability Office (GAO) reports, at any given time, about 3 million government employees have security clearances. The article also states, that about 1.5 million security clearances are in the hands of private contracting or consulting firms (TAOnline, 2007).

1. Obtaining a Security Clearance

Security clearances are requested by the agency that will benefit from the services of the cleared individual. Government contractors participate in the Industrial Security Program (ISP) administered by the Defense Industrial Security Clearance Office (DISCO) which is part of the Joint Information Systems Technology (JIST), a military agency (TAOnline, 2007).

Obtaining a security clearance is not instantaneous event. A recent Web page document, *About: US Military,* concludes that the time needed to accomplish a background investigation and adjudicate a clearance depends on the type of clearance. The site also indicates that investigations will take more time if there are unusual factors in the person's reported information, such as one or more of the factors stated below (Powers, 2007):

- Lived or worked in several geographic locations or overseas

- Traveled outside of the United States

- Relatives have lived outside of the United States

- Background information is difficult to obtain or involves issues that require case expansion.

C.   KNOWN COSTS

Known costs are those that government officials are aware they are paying to grant and maintain security clearances. They are requested annually in the President's Budget (PB) specifically to identify the costs to maintain the government's personnel clearance process.

1.   OPM Baseline

The Intelligence Reform Act required the President to designate a single executive to oversee and develop uniform standards and policies, and to designate other investigative agencies for security and efficiency (108th Congress, 2004). The Office of Personnel Management (OPM) was chosen as the lead agency in conducting security clearance background investigations. Therefore, the proportionate cost in their budget to support background investigations is a definite known cost.

a.   *Cost Paid to Obtain and Maintain Cleared Individuals*

OPM charges Agencies such as DoD and DISCO (for DoD contractors) for the background investigations on a "fee for service" basis. Therefore, planned background investigations requirements are included in agency budgets.

b.   *Baseline of Adjudicative Facilities*

Adjudicative facilities review and evaluate results from background investigations. They use the information to either grant or deny/revoke security clearances to individuals. A budget for their requirements is requested annually within the PB.

D.   UNKNOWN COSTS

Unknown costs are defined as costs that government officials are typically not aware they are paying to support the personnel clearance system. Therefore, these costs are not part of the PB process. While the following list is not all inclusive, it does address the primary costs included within the scope of this research.

1.   Preparation and Oversight of Documentation to Request a Clearance

Requesting a new or continued security clearance requires the nominee to complete forms. The nominee usually consumes a lot of time gathering data to complete the forms. As part of this project, the cost of this requirement will be estimated.

2.   Lost Time Waiting for a Security Clearance

A security clearance is not granted immediately. It is not uncommon for security clearance applicants to wait as long as one year for a clearance.   During this time, they often receive normal pay — even though often they are not delivering 100 percent of the capability for which they were hired.

3.   Other Costs

Other costs not identified within the primary categories are included in this section. They include but are not limited to:

- Time spent talking to background investigators during work hours; by the security clearance applicant, by prior employment contacts, by individuals listed by the clearance applicant as references and others that the investigator chooses to speak to.

- Time spent checking on clearance status (subject or supervisor, clerical support, security manager performing Joint Personnel Adjudication System (JPAS) inquiry)

- Time spent giving and receiving required personnel security briefings

- Time spent reporting foreign travel, associations with foreign individuals, and other issues required to be reported within the investigation cycle

- Contractor costs

- Time spent by individual moving to and from the designated locations to meet all the above stated requirements

E.   INVESTIGATIVE STANDARDS

Table 1 is a guide to the minimum requirements by access levels as set by E.O 12968, signed August 2, 1995 (Clinton, 1995). The table depicts the minimum level of investigations required to award Confidential, Secret, and Top Secret clearances.

Table 1.   Investigative Requirements (from GAO report 04-632)

14. Subject Interview: To collect relevant data, resolve significant inconsistencies, or both	Confidential or Secret	Yes Top Secret	Yes
Type of information Gathered	**Initial investigation or reinvestigation**	**Initial Investigation**	**Reinvestigation**
1. Personnel Security Questionnaire: subject reported answers to investigative questions	Yes	Yes	Yes
2. National Agency Check: Data from FBI, Military, etc.	Yes	Yes	Yes
3. Credit check: Data from credit bureaus where the subject lived/worked/attended school for at least 6 months	Yes	Yes	Yes
4. Local Agency Checks: Data from law enforcement agencies where the subject live/worked /school during past 5 years	Yes	Yes	Yes
5. Date and place of birth: Corroboration of information provided in questionnaire.		Yes	Yes
6. Citizenship: Verification of U.S. citizenship directly from the appropriate registration authority		Yes	Yes
7. Education: Corroboration of most recent or significant		Yes	Yes
8. Employment: Review employment records and interviews with references		Yes	Yes
9. References: Data from interview with subject-identified and investigator developed leads		Yes	Yes
10. National agency check for spouse or cohabitant: National agency check without fingerprint		Yes	Yes
11. Former Spouse: Data from interview(s) with spouse divorced within 10 years		Yes	Yes
12. Neighborhoods: Interviews with neighbors and verification of residence through records check		Yes	Yes
13. Public records: Verification of issues, such as bankruptcy, divorce, and criminal and civil court cases		Yes	Yes

F.   SCOPE OF THE PROGRAM

The OPM Fiscal Year (FY) 2005 Performance and Accountability Report states that OPM provides investigative services in support of over 100 agencies and contractors, and fulfill 90 percent of the existing requirement for background investigations (McFarland, 2005). The most recent projection from OPM to PERSEREC (April 25, 2007) estimated that 1,765,934 investigations will be initiated in 2007. Of these investigations, only 979,244, or 55.4 percent, appear directly associated with a Confidential, Secret, or Top Secret Security Clearance.

1.   Program Customers

All government agencies and government contractors have a proportion of their employees who require a security clearance. Table 2 is a comprehensive list of all government authorizations measured as Full Time Equivalents (FTE) for 2005 and estimates through 2007 (OMB, 2005). While all of the government authorizations do not require a security clearance, all have to be investigated to work for the government. Information was not available to identify all the potential security clearance applicants within the private sector, but Table 3 reveals the magnitude of government work that is contracted out to private companies. (GOVEXEC.com, 1999).

Table 2.   Total Federal Employment

(As measured by Full-Time Equivalents (FTE) from: whitehouse.gov)

Description	2005 Actual	Estimate		Change: 2005 to 2007	
		2006	2007	FTE's	Percent
Executive branch civilian personnel:					
All agencies except Postal Service and Defense	1,176,630	1,207,502	1,204,005	27,375	2.3%
Defense-Military functions (civilians)	652,987	666,663	663,649	10,662	1.6%
Subtotal, excluding Postal Service	1,829,617	1,874,165	1,867,654	38,037	2.1%
Postal Service [1]	744,196	732,348	717,000	-27,196	-3.7%
Subtotal, Executive Branch civilian personnel	2,573,813	2,606,513	2,584,654	10,841	0.4%
Executive branch uniformed personnel: [2]					
Department of Defense	1,408,115	1,375,647	1,347,100	-61,015	-4.3%
Department of Homeland Security	40,710	41,139	41,528	818	2.0%
Commissioned Corps	6,363	6,404	6,420	57	0.9%
Subtotal, uniformed military personnel	1,455,188	1,423,190	1,395,048	-60,140	-4.1%
Subtotal, Executive Branch	4,029,001	4,029,703	3,979,702	-49,299	-1.2%
Legislative Branch: 3 Total FTE [3]	31,831	32,681	33,004	1,173	3.7%
Judicial branch: Total FTE	32,912	33,681	34,086	1,174	3.6%
Grand total	**4,093,744**	**4,096,065**	**4,046,792**	**-46,952**	**-1.1%**

[1] Includes Postal Rate Commission.

[2] Military personnel on active duty. Excludes reserve components. Data shown for military are average strengths, not FTEs.

[3] FTE data not available for the Senate (positions filled were used).

Table 3.   Top 200 Government Contractors (from: GOVEXEC.com)

Total Purchases in thousands: $174,448,861					
Rank	Parent Company	Total	DoD	Civilian	DoD Rank	Civilian Rank
1	Lockheed Martin Corp.	$18,353,781	$12,395,041	$5,958,740	1	1
2	Boeing Co.	14,111,208	10,988,491	3,122,717	2	2
3	Raytheon Co.	7,318,690	6,478,655	840,035	3	7
4	Northrop Grumman Corp.	4,205,899	4,091,558	114,341	4	57
5	University of Calif. System	2,691,575	28,625	2,662,950	397	3
6	United Technologies Corp.	2,251,887	1,917,962	333,925	6	25
7	Westinghouse Electric Corp.	2,247,784	633,943	1,613,841	16	4
8	General Dynamics Corp.	2,137,406	2,101,421	35,985	5	175
9	Litton Industries Inc.	1,894,727	1,751,402	143,325	7	45
10	General Electric Co.	1,891,961	1,629,903	262,058	8	29

2. Technologies Protected by the Program

While many corporations have contracts with the government, some almost specialize exclusively in classified government work involving federal agencies that rely on OPM investigations. Compromise of any classified information endangers national security. Below is a GAO list of the most targeted technologies for espionage (GAO-04-332, 2004).

Table 4. Critical Technologies List (from GAO)

1. Aeronautics Systems	10. Manufacturing and Fabrication
2. Armaments and Energetic Materials	11. Marine Systems
3. Chemical and Biological Systems	12. Materials
4. Directed and Kinetic Energy Systems	13. Nuclear Systems
5. Electronics	14. Power Systems
6. Ground Systems	15. Sensors and Lasers
7. Guidance, Navigation, and Vehicle Control	16. Signature Control
8. Information Systems	17. Space Systems
9. Information Warfare	18. Weapons Effects and Countermeasures

II.   METHODOLOGY

A.   APPROACH

The primary approach used in this study was to first identify the activities that are required to obtain or retain a security clearance, and then estimate a cost for each activity. People involved with each major activity identified were interviewed to help document the nature of the activities performed and document their cost. Additionally, pertinent reports from GAO, PERSEREC, and other sources were reviewed to aid in the data-gathering process. Another source that proved helpful was interviewing security clearance holders and leaders of missions that require security clearances for their personnel.

OPM provides many investigative services, but the scope of this research only addresses investigations and other tasks required for receiving or keeping the three major clearance levels: Confidential, Secret, and Top Secret. After conducting several interviews, it became clear that the major cost-creating tasks were performed by the personnel categories listed below, which then became the focus of the research:

- Installation security managers
- Office Personnel Management investigations and support personnel
- Adjudicators
- Security Clearance Holders

B.   GENERAL ASSUMPTIONS

1.   Average Pay Earned While Waiting for a Security Clearance

Within the federal government, the estimated income earned while waiting for a security clearance includes actual cash disbursements to employees, as well as benefits.

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a.   *Federal Government Employees*

According to the 2007 PB, the U.S. government employs over four million people. In Table 2, the historical employment levels by department, along with Fiscal Year 2007 projections, were reproduced from the PB. By coupling this data with the payroll estimates available in the PB (see Table 5), the average cost of employee time can also be calculated.

As depicted in Table 5, the values of any loss in labor hours due to delays in the security clearance process, as well as time spent requesting a clearance, were assessed by their total average cost. Table 2 and Table 5 reflect that the military requested 1,395,048 active duty full-time equivalent military authorizations costing $108.595 billion for Fiscal Year 2007. Therefore, each work year of lost productivity due to performing activities associated with security clearances costs an average of $77,843 for the military population. The same data sources also reflect that the government employs 1,867,654 civilians at a cost of $182,286 million. Therefore, the average work year lost due to security clearance related matters costs approximately $97,601.Personnel Compensation And Benefits (in millions of dollars) from: whitehouse.gov

Table 5.   Total average cost

Description	2005 Actual	2006 Estimate	2007 Request	Change: 2005 to 2007	
				Dollars	Percent
Civilian personnel costs:					
Executive Branch (excluding Postal Service):					
Direct compensation:					
DOD military functions	40,899	42,013	42,587	1,688	4.1%
All other executive branch	83,960	88,859	91,337	7,377	8.8%
Subtotal, direct compensation	124,859	130,872	133,924	9,065	7.3%
Personnel benefits:					
DOD military functions	10,619	11,151	11,477	858	8.1%
All other executive branch	34,315	35,904	36,885	2,570	7.5%
Subtotal, personnel benefits	44,934	47,055	48,362	3,428	7.6%
Subtotal, executive branch	169,793	177,927	182,286	12,493	7.4%
Postal Service:					
Direct compensation	39,300	40,195	40,953	1,653	4.2%
Personnel benefits	13,084	15,020	15,263	2,179	16.7%

Subtotal	52,384	55,215	56,216	3,832	7.3%
Legislative Branch: [1]					
Direct compensation	1,803	1,871	1,968	165	9.2%
Personnel benefits	482	532	560	78	16.2%
Subtotal	2,285	2,403	2,528	243	10.6%
Judicial Branch:					
Direct compensation	2,556	2,731	2,917	361	14.1%
Personnel benefits	736	799	849	113	15.4%
Subtotal	3,292	3,530	3,766	474	14.4%
Total, civilian personnel costs	227,754	239,075	244,796	17,042	7.5%
Military personnel costs:					
DOD Military Functions:					
Direct compensation	79,445	74,162	71,421	-8,024	-10.1%
Personnel benefits	38,329	37,055	37,174	-1,155	-3.0%
Subtotal	117,774	111,217	108,595	-9,179	-7.8%
All other executive branch, uniformed personnel:					
Direct compensation	2,407	2,612	2,636	229	9.5%
Personnel benefits	653	724	753	100	15.3%
Subtotal	3,060	3,336	3,389	329	10.8%
Total, military personnel costs [2]	120,834	114,553	111,984	-8,850	-7.3%
Grand total, personnel costs	**348,588**	**353,628**	**356,780**	**8,192**	**2.4%**
Former Civilian Personnel:					
Retired pay for former personnel	56,073	59,579	62,516	6,443	11.5%
Government payment for Annuitants:					
Employee health benefits	7,889	8,204	8,765	876	11.1%
Employee life insurance	38	39	39	1	2.6%
Former Military personnel:					
Retired pay for former personnel	39,166	41,396	43,582	4,416	11.3%
Military annuitants health benefits	6,399	7,097	7,541	1,142	17.8%
[1] Excludes members and officers of the Senate.					
[2] Excludes reserve components not on active duty.					

b.   *Contractors*

Unlike the U.S. government, contractors do not maintain consolidated statistics on personnel and salaries within their industries. However, a clearancejobs.com 2006 survey that included 2,175 job seekers with active or current U.S. security clearances was the best resource found.   This survey reported that there are signs that government contractors are paying a premium for some of their cleared personnel. For

example, a database administrator earned 9.74 percent more with a clearance (CleranceJobs.com, 2006). The average salary for a contractor employee holding a Top Secret Clearance was $70,223.62. The average salary of a Secret clearance holder was $62,160.58, and the average salary for a Confidential clearance holder was $52,000.

2. Other Assumptions

- When Civilian to Military Ratios were not available, their proportion of the total government were used to allocate costs: 57.2 percent Civilians and 42.8 Military, based on Table 5

- Baseline Support is equivalent to approximately 32.56 percent of personnel cost. This assumption was based on OPM actual requirements as they compared to their payroll cost (OPM, 2006). This approach appears reasonable because all of the missions relevant to the security clearance process are administrative in nature and require similar forms of support.

- Based on correspondence from OPM to PERSEREC on April 25, 2007, only 979,244, or 55.415 percent, of the 1,765,934 investigations appear to be directly associated with OPM Confidential, Secret, or Top Secret Security Clearances. The remaining OPM investigations were for other purposes and outside of the scope of this research.

- Adjudicators were assumed to be composed of 13 percent Military and 87 percent Civilian personnel, based on the 1991 study documented in PERS-TR-92-001

- If a security clearance applicant had to travel from their duty location to complete a security clearance related task, one hour was allocated to work stoppage and time to move. This assumption is based on the inputs from several clearance holders and documented in Chapter 3.

- It was assumed that 50% of military applicants waiting for a Single Scope Background Investigation (SSBI) were awarded an interim clearance

within 120 days and 50 percent of Civilian applicants received an interim clearance within the first week of employment.

- A review of OPM actual investigations ordered in 2007 concludes that the OPM estimates in Table 11 might be overestimating requirements. National Agency Check with Law Check (NACLC)/Access National Agency Check with Inquiries (ANACI) might be as much as 32 percent under projections, SSBI 22 percent under projections, and reinvestigations as much as 13 percent under projections. These projections anticipate that 676,474 investigations will be ordered.

C.   BACKLOG

1.   Backlog of Security Clearances

All data gathered from interviews and relevant GAO reports since 2000 demonstrated that the phenomena of having a backlog of people in need of security clearances awaiting investigation and adjudication are not new. The latest oversight group report stated that significant progress had been achieved, but also informed Congress that much improvement is still required, especially for reinvestigations (Security Clearance Oversight Group, 2007).

The Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA) mandates that by December 17, 2006, OPM must be able to complete 80 percent of background investigations for security clearances within 90 days. The law allows an additional 30 days for independent adjudicators to decide whether granting/retaining a security clearance is justified based upon the information obtained during the course of the background investigation (108th Congress, 2004).

The Security Clearance Oversight Group examined Fiscal Year 2004 and Fiscal Year 2005 investigative and adjudicative outputs to assess for Congress the current state of the security clearance process. They found that the time to complete an investigation is improving. Table 6 depicts the amount of time it was taking to complete background investigations. They mention that 80 percent of initial investigations were completed

within the first 90 days and were adjudicated within 30 days, which satisfies the required standard (Security Clearance Oversight Group, 2007). Therefore, if 80 percent of the investigations meet the goal but 20 percent of the investigations drive the average time to the reported average waiting days documented on Table 6, it is evident that the remaining 20 percent is taking much more time.

Table 6.   Time to Complete Background Investigations from: 2007 Security Clearance Oversight Group report to Congress

		FY 04	FY 05
Initial Clearance Investigations completed	Top Secret Average Days	392 days	347 days
	Secret/Confidential Average Days	179 days	155 days
Reinvestigations for Top Secret Completed	Average Days	579 days	482 days

The average time spent waiting for a clearance was used as one element to estimate the amount of time lost by each category of employee spent waiting for a clearance. To determine whether there were any actual cost losses accumulated during the first 120 days waiting for a clearance, recruiters and functional personnel that process new service members into the military were interviewed.

During February 2007, two former recruiters were interviewed to help determine when delays in granting security clearances resulted in losses of productivity. They were informed of the 2006 IRTPA requirement to complete 80 percent of investigations by 120 days, and they both had the same answer. They thought that the first 120 days waiting for a clearance were probably not going to cost anything. They stated that military personnel take leave after basic training in addition to the time they spend at basic training. Additionally, they noted that, even when new service members arrive at an installation, they take some time to process into the base, and much of their first couple of

months are spent training.   Therefore, it was assumed that, for military members, the first 120 days waiting for a clearance typically had little if any adverse cost consequence.   In the very few cases where it was significant, schools were directly working with basic training officials or commissioning service leaders to initiate the security clearance processes as soon as possible for these individuals.

Civilian hires are a different story.   The three senior leaders interviewed in March 2007, all stated that civilian personnel usually entered the workforce ready to operate and usually did not receive external training prior to commencing their duties.   Therefore, they assumed that, for civilians, there was a cost for waiting on a security clearance as soon as they reported to work.

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III. DATA GATHERED

A. INSTALLATION LEVEL SUPPORT

1. Known Cost

Data was gathered from one installation, the Naval Postgraduate School (NPS), to help identify known support costs associated with the security clearance process. According to the NPS fact book, there are approximately 2,000 students, 525 faculty members, 347 civilian employees, and 169 contractors at NPS. Within the above figures, only 1,500 students will be counted when proportioning cost, since approximately 500 students are foreign nationals and are not eligible for U.S. government security clearances (Naval Postgraduate School, 2005).

The base security manager's office is responsible for two primary missions: 1. Facilitate clearance investigations (about 70 percent of their workload), and 2. Ensure personnel who travel outside of the Continental United States (CONUS) are aware of known threats (about 30 percent of their workload). Both functions are necessary to protect information that is critical to National Security because the information and the individuals with access to the information have to be protected. It will be assumed that the relative amount of time spent per case addressing concerns applicable to clearance levels will be similar to the ratio of time spent per case by adjudicative facilities for each clearance level, and documented in Table 11. Security managers will typically spend more time talking to a person considered for a higher-level clearance than to someone seeking a lower-level clearance (much like adjudicators spent more time reviewing background investigations for higher-levels clearances). There are, however, more people holding lower-level clearances across the government. Therefore, more total time is spent on lower-level clearances — but higher-level clearances require more time per unit.

The Institute for Defense Analysis performed a study in 1995 that included gathering information on resources consumed by DoD in security management duties (Shea, 1989-92). The study concluded that these tasks were accomplished differently by

all services. They concluded that, on average, the Air Force as well as the Army consumed one work year for every 415 security clearance holders. Data on the Navy and Marines was difficult to assess because of inter-service support coupled with the fact that many of their security management tasks are performed by other supporting activities.

2. Unknown Cost

a. *Facilitate Clearance Investigations*

The NPS security manager and members of his staff were interviewed in January 2007 to identify key processes and document the resources used.

Typically most military service members move about every three years. When they arrive at an installation, they are required to "in-process" at the security manager's office. As a part of in-processing, the security clearance office immediately validates current security clearance status in the Joint Personnel Adjudication System (JPAS), which takes about 10 minutes. If the service member requires a new clearance or a reinvestigation, they are provided instructions to initiate the investigation electronically.

i. Required Forms. The Installation security manager is required to follow guidance provided by OPM on IS-15 "Requesting Personnel Security Clearance Investigations Instruction" when preparing documentation to support background investigations. Table 7 depicts the required documents to request a background investigation according to OPM IS-15 (OPM, 2001). OPM IS-15 also describes the forms in Table 7 and what they are used for. Forms SF-85 and SF-86 are the actual security clearance questionnaires that applicants must complete to request a security clearance. Which request form must be used will depend on the type of investigation and the position the applicant is applying for. Form OF306 is a declaration for federal employment and the SF 87/FD258 is the fingerprint chart.

Table 7.   Documents Required to Request Background Investigation, from OPM IS-15

	Non-Sensitive Position	National Security Sensitive Position	Public Trust Position
New Federal Appointment Action	SF 85-original SF 87 OF306 Application/Resume	SF 86-original SF 87 OF306 Application/Resume	SF 85P-original SF 87 OF306 Application/Resume
Contractor	SF85-original FD258 Limited OF 306	SF 86-original FD 258	SF 86P-original FD 258
Reinvestigation	SF-85-original SF87 (Federal Employee) or FD258 (Contractor) Limited OF 306	SF-86-original (Fingerprints Optional) SF87 (Federal Employee) or FD258 (Contractor)	SF-85-original (Fingerprints Optional) SF85P-S-if required by Special Agreement SF87 (Federal Employee) or FD258 (Contractor)
Update & Upgrade Investigation	Not Applicable	SF-86-original SF87 (Federal Employee) or FD258 (Contractor)	SF-85-original (Fingerprints Optional) SF85P-S-if required by Special Agreement SF87 (Federal Employee) or FD258 (Contractor)

ii. Preparing Documents for Submission. The security managers serve as the first filter to ensure OPM receives the most useful information to complete the investigation as soon as possible. Therefore, they carefully review documents prepared by the clearance holder. Note, security managers and their staff are elements adding to cost of personnel security, which is often not considered at the national level. The NPS security manager also mentioned that, even if documents are filled out correctly, the security office staff still review the forms to identify any discrepancies that will cause OPM to further investigate or if it is obvious that the individual will not pass

the investigation. Delays in getting the form through this review and approval process add to the length of the investigation, which may add additional cost. In those cases, where the security manager believes delays may occur, the service member will be scheduled for a preliminary interview with a security manager internal investigator. When an investigation is complete, the member is also called in and briefed accordingly.

b. Personnel Security

The other primary mission of the security manager is to provide security briefings to personnel who travel outside of Continental United States (CONUS). The security manager stated that service members traveling outside of CONUS are required to coordinate with two separate offices prior to commencing travel; the Travel Office and the security manager office.

i. Travel Office. A travel support technician was interviewed in February 07 to identify any activities that generate cost within their office. She stated that their primary role was coordinating permission to enter a foreign country; she estimated that this process usually takes less than 20 minutes. To help document the cost, five travelers were asked how long this process took. The average reported time was 1.5 hours. This time included completing forms and movement to and from the travel office, along with coordinating approval. The security manager stated that about 12 travel requests a week require a country clearance.

ii. Security Manager. The NPS security manager stated that travelers must also complete two travel security-related documents for any country listed within the travel orders. Additionally, the security manager provides one briefing.

c. Documentation Required to Travel

Military members are required to provide documents and attend training or briefings prior to traveling outside of the United States. All time estimates to complete these documents and attend training were gathered from the interview with the NPS security manager.

i. Anti-terrorism Training. The anti-terrorism training at NPS is computerized and the security manager estimates that it takes about one hour to complete.

When the training is completed, the clearance holder sends an e-certificate to the security manager's office for entry into their records. The training covers the basic information about travel, such as how one may be targeted by spies, where to sit in an airplane, and other basic safety information. Everyone who has a security clearance is required to complete this training once a year.

ii. The Individual Force Protection Plan (IFPP). The security manager estimated that the Individual Force Protection Plan orientation takes about 15 minutes to complete. The document covers: purpose of travel, itinerary, date of anti-terrorism training certificate, a copy of a threat-level analysis prepared by the security manager's office, embassy/consulate information, and phone numbers required to change a flight itinerary. Once completed, the form is approved and signed by the NPS President or the delegated official. Travelers are required to take this document with them for reference if there is a security incident. A copy is also maintained at the security manager's office. The security manager may use the document if the traveler must be contacted.

iii. Travel Briefings. Travel briefings are normally sent electronically to the traveler. The security manager states that it usually takes about 20 minutes to review the information. However, if the brief is classified, service members are required to go to the security manager's office and sit in a secure facility to receive the briefings. According to the security manager, this process takes about 20 minutes and only about 1 percent of travelers require classified briefs. Five travelers were interviewed to document the costs generated by this activity. The travelers who required the e-mail version said that the 20-minute estimate was accurate.

d. *Validation of Security Manager Data*

Twenty clearance holders were interviewed to document indirect costs of security manager activities between December 2006 and February 2007. Each clearance holder was asked the questions listed below. There were no contractors within the sample — only GS-civilians and military service members. It was assumed that contractors would probably spend the same amount of time as military and GS-civilians.

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- How long did you spend checking in with your security manager?

- How much time did you spend completing the forms required to request a security clearance?

- How much time did you spend providing your fingerprints? It should be noted that in an interview on April 17, 2007, the NPS security manager said that, due to administrative issues with OPM, all reinvestigations will also require fingerprint cards until further notice.

- How much of the time was duty time?

The interview results indicated that new hires spent the most time completing the requirements for a security clearance. The time difference for checking in was negligible and the proportion of duty time was similar. Table 8 depicts the average time spent accomplishing each activity by type of investigation and Table 9 provides the results by individual. Measurements of resources consumed were documented in appropriate units for each activity as follows: Check-in time is measured in minutes; completion of the request for a security clearance is measured in hours; fingerprinting is measured in hours; and proportion of time was measured as a percentage of duty time that was spent completing the activities mentioned on Table 8. Most survey participants were actually customers of other installations.

Table 8.   Time Required to Gather Documents

	New Hires	Reinvestigation	Upgrade
Check in with Security Manager (minutes)	11.54	10.00	10.00
Complete SF 86 or equivalent (hours)	4.46	3.33	4.33
Fingerprinting (hours)	1	N/A	N/A
Resume	N/A	N/A	N/a
Proportion of duty time	81.92	86.67	81.67

Table 9.   Time Required to Gather and Complete Documents

Members Interviewed	Check In (Minutes)	Complete Request Form (Hours)	Provide Fingerprints (Hours)	Duty Time (Percent)
New				
Respondent 1	10	5	1	85
Respondent 4	20	5	1	90
Respondent 5	15	7	1	100
Respondent 6	15	6	1	75
Respondent 2	5	3	1	75
Respondent 10	10	3	1	60
Respondent 12	15	5	1	50
Respondent 13	5	4	1	75
Respondent 14	5	4	1	80
Respondent 16	10	4	1	70
Respondent 17	10	5	1	100
Respondent 18	30	3	1	90
Respondent 19	5	6	1	100
Respondent 20	5	3	1	100
Total	**160**	**63**	**14**	**1150**
Average	**11.43**	**4.50**	**1**	**82.14**
Reinvestigation				
Respondent 3	10	4		90
Respondent 8	5	3		95
Respondent 9	15	3		75
Total	**30**	**10**		**260**
Average	**10**	**3.33**		**86.67**
Upgrade				
Respondent 7	15	4		70
Respondent 11	10	5		85
Respondent 15	5	4		90
Total	**30**	**13**		**245**
Average	**10**	**4.33**		**81.67**
Total	**220**	**86**	**14**	**250.48**
Average	**11**	**4.3**	**1**	**83.49**

3.   Measuring Productivity While Waiting for Clearance

To estimate the value of resources lost by security clearance holders while waiting for a clearance, first-level supervisors of clearance holders and third-level or above supervisors were asked the questions listed below between December 2007 and February 2007. In some cases, individuals responded as both clearance holders and supervisors.

Ten clearance holders were asked the following questions:

- **Use a percentage to quantify your productivity while waiting for your security clearance.**

— Three stated that while waiting for their secret clearance they were nearly 80 percent, 90 percent, and 90 percent productive, respectively;

— Three stated that while waiting for their Top Secret Clearance they were 50 percent, 25 percent, and 25 percent productive, respectively;

— The remaining four stated that, while waiting for reinvestigations to be completed, their productivity did not change, noting that as long as their clearance paperwork had been submitted, their existing clearance was valid.

b. *First-Level Supervisors*

The sample included five first-level supervisors who were given the following instructions:

- **Use a percentage to quantify productivity of people waiting for a security clearance based on your experience. Consider time spent by others accomplishing duties that were the responsibilities of the personnel waiting for their clearances, as well as whether you were able to assign them to other duties that had value.**

The first respondent said 20 percent — he supervised a section with restricted access to Top Secret cleared personnel. He valued the additional duties assigned that were relevant for tasks in his area. However, he did not value tasks performed by people assigned to him that related to other missions.

The second respondent said 0 percent — he also supervised a section with restricted access to Top Secret cleared personnel. Two people in his section were

denied clearance. Their contributions to additional duties was valued less than the time he claimed he had to spend helping them prepare for their next opportunity to get a security clearance. According to this respondent, he spent one hour a week per person for six months dealing with issues resulting from their problem. It included small items such as making sure those service members paid car debts. It should be noted that an OPM investigator who was interviewed for this project indicated that only about one percent of the people being investigated for a security clearance have their security clearance denied or revoked.

The third respondent said that he was getting nearly 80 percent productivity since very little of the work in his area was classified. Although his section required a Top Secret clearance, most of the work did not require access to classified material. However, he added that it was difficult to logistically secure the small percentage of classified secure material and to permit all of his staff to work effectively when cleared and non cleared personnel were in the same space.

The last two respondents claimed 100 percent productivity. They supervised missions requiring a secret clearance. Both said that people assigned to their area rarely dealt with classified material or needed to enter facilities requiring a security clearance. They worked in support functions such as finance and services.

c.   Senior Leaders

The sample included three third-level supervisors or above (ranging from Grades 0-6 to 0-7) who were instructed to:

- **Use a percentage to quantify productivity of people waiting for a security clearance based on your experience. Consider time spent by others accomplishing duties that were the responsibilities of the member waiting for his clearance, as well as whether they could be assigned to other duties that had value.**

— All three responded 50 percent

- **Answer the same question by security clearance level. Take into account time spent compensating for their unavailability and whether they were accomplishing other work while they waited.**

    —Confidential: two responded 70 percent and one said "nearly 80 percent"

    —Secret: same as confidential

    —Top Secret: all three said about 25 percent

d.   *Additional Comments*

The personnel interviewed in all three categories (i.e., clearance holders, first-level supervisors, and third-level supervisors) mentioned that some people had to be assigned to duties below their pay levels — such as handing out towels at the gym — or worked on projects with little value added while waiting for a clearance.

First-level supervisors mentioned that the variance in time a security clearance takes made it more difficult to gainfully employ an individual while waiting for a clearance.

Senior leaders stated that new hires usually spent time training and learning their job, and constituted the majority of those waiting for clearances.

Most people waiting for periodic reinvestigations were able to accomplish 100 percent of their duties because their clearances were still valid as long as their security questionnaires were submitted on time.

The areas involving the greatest loss of productivity were those involving people waiting for clearance upgrades and assignments to work locations where they could not even enter without the clearance.

Clearance upgrades often involved situations where interim clearances were most appropriate, especially in cases where a Top Secret clearance was now needed. It usually took only about three hours of a first-level supervisor's time to gather the

required data, then about an additional hour to review those materials prior to making the interim clearance determination. However, one senior said that interim clearances were rarely used in the positions with which he was familiar.

e. Validation of Field Inputs

A July 2000 report by Newport News Daily Press concluded that commands that focus on initial training are the most impacted by "waiting for clearances." Their findings were based upon commentary and data from several of these functions at different military installations (Philpott, 2000).

In that article, an unidentified Keesler Air Force Base (AFB) sergeant complained that would-be crewmen, electronic warfare specialist, and aircraft maintenance personnel waited months for clearances to commence training. He stated that nearly 10 percent of their trainees were in this status — and did meaningless tasks while they waited. He also mentioned that the students expressed frustration that increased the possibility of them getting into trouble or leaving the service. A House Government Reform Committee staff member interviewed several sergeants as a result of this complaint and found the information credible. He could not validate the 10 percent figure, but did obtain commentary from the Air Education and Training Command in Randolph AFB, San Antonio, which stated that 190 airmen and 17 officers were stalled in training cycles during that period awaiting clearances.

Navy nuclear propulsion officials interviewed for the Newport News article voiced concern about the investigation backlog, noting that 12 percent of students assigned to each class had been held back for two months. They addressed the problem by working with DSS to file security clearance paperwork for their potential students as soon as members entered basic training. A spokesman for the Chief of Naval Education and Training in Pensacola also voiced concerns about Navy cryptologists scheduled to attend the Naval Technical Training Center at Corry Station, Florida. He stated that, in January 2000, nearly one-third of 1,500 students could not go to the fleet until their security clearances were granted (amount of time spent waiting was not provided). They

were able to reduce the number of people waiting on security clearances to an average of 126 from 500 by sending them to the fleet in limited duty status.

Service members interviewed for the present study provided percentage of productivity estimates based on the duties they actually performed while waiting on their security clearance, compared to what they were getting paid to do. The above examples demonstrate that the situations expressed by the interviewed personnel also occur in other commands.

B.   OFFICE OF PERSONNEL MANAGEMENT (OPM)

1.   History

According to its 2007 budget, OPM's primary mission and major use of its resources are to help manage the federal labor force. However, OPM has traditionally also been a significant participant in the security clearance process. Of a total requirement of approximately 1.5 million background investigations conducted in 2005 for both security and suitability assessments, OPM performed about 40 percent. They used about 50 work years for support, management and quality assurance, and contracted out the majority of their background investigation requirements to United States Investigative Services (USIS), a private sector vendor that specializes in providing background investigative services to the government. Their Fiscal Year 2007 fee for services ranged from a low of $83 for a National Agency Check to a high of $3,900 for a SSBI with rush service. A full pricelist is available at the OPM Web page.

In prior years the Defense Security Service (DSS), the Federal Bureau of Investigations (FBI), and the Central Intelligence Agency (CIA) also performed a significant number of background investigations. The system was redundant and, at least in theory, used more resources than would have been required to accomplish the same mission using a single process owner.

DSS was conducting about 40 percent of the total investigations with about 1,850 work years, primarily for DoD; the FBI and CIA conducted the remaining 20 percent. However, the National Defense Authorization Act for Fiscal Year 2004 authorized the DSS to transfer their 1,850 investigative employees to OPM, along with the responsibility

of conducting all background investigations for DoD agencies and contractors. OPM now is responsible for approximately 95 percent of all background investigations. According to estimates available in its budget, that workload required about 8,000 work years.

As of the end of 2005, OPM employed approximately 2,000 people (most of who previously worked for DSS). They conducted about 10 percent of the approximately 1.5 million background investigations and provided support, management, and Quality Assurance for six contractors (who performed work equivalent to 6,000 FTEs) who conducted the remaining 90 percent of the investigations on a fee per service basis (McFarland, 2005).

2. Known Costs

a. Current Baseline Costs

The OPM 2007 budget requires $725 million for in-house personnel, totaling 2,000 work years and the share of overhead utilized by that particular mission. According to estimates provided to PERSEREC by OPM on April 23, 2007, the background investigation requirements have increased to approximately 1.8 million each year (OPM, 2006).

b. Investigation Costs

The costs for investigative services are posted on the OPM Web site and were updated in Notice No 06-08 on September 11, 2006. They are effective from October 1, 2006, to September 30, 2007. The use of fixed prices enables the agencies that use those services to budget for their background investigation requirements. OPM also offers numerous special investigative products to meet the varied needs of its customers, but this is not part of this research. In Notice 06-09, OPM provides a comprehensive list of services along with their prices (Dillaman, 2006).

OPM assigns background investigation cases to either a contractor or a to a government investigator, depending upon the type of case, the agency that submitted it, and other factors. The investigators gather the information required by the applicable

national investigation standards for the adjudicating agency to make a security clearance determination. Chapter I discussed the minimum requirements as set by E.O 12968 in 1995. OPM services that meet the national investigation standards and their cost retrieved from Notice 06-08 are summarized below by security clearance type. OPM provides rush service and regular service. According to OPM Notice 97-02, under their regular service prices, the law coverage (e.g., checking with local police departments) will be attempted by written inquiry whenever possible, with expedited record searches conducted at non-responsive or admitted arrest locations. Under their rush service, all law checks are scheduled as expedited record searches completed by field staff (Ferris, 1997).

1. Confidential Clearances — A reinvestigation is required every 15 years and results in the same cost as the initial investigation. Products available that meet the national investigation standards for a confidential clearance (same as for secret clearances) from OPM are NACLC (used for federal employees) and ANACI (used for contractor employees) (Notice 06-08).

2. Secret — A Reinvestigation is required every ten years and all product requirements and cost are identical to confidential

3. Top Secret — A Reinvestigation is required every five years (SSBI-PR): $2,625 for rush service and $2,400 for regular service. The investigation that meets the national investigation standards for a Top Secret Clearance from OPM is the SSBI investigation.

NACLC: $240 for rush service and $192 for regular service:

- Includes Basic National Agency Checks defined by OPM (Security/Suitability Investigation Index, Defense Clearance and Investigations Index, fingerprint classification, and a search of the Federal Bureau of Investigation's investigative index)

- Includes a credit search covering all residence, employment, and education locations during last seven years.

- Law Checks covering all locations of residence, employment, and education during last five years and all locations of admitted arrest.

ANACI: $260 for rush service and $220 for regular service; they include the same investigative products described under NACLC

Single Scope Background Investigation (SSBI): $3,900 for rush service and $3,550 for regular service.

- SSBI includes Employment coverage for seven years, validation of education attendance during last three years, residential coverage for last three years, law enforcement coverage for last ten years, financial records for last seven years and four references with social knowledge of the subject over last seven years will be obtained.

- SSBI-PR includes Personal coverage of current or most recent residence of six months or more, coverage of all employment of six months or more during scope of time regardless of duration, covers former spouse interviews and a search of the Treasury's Financial Crimes Enforcement Network (FINCEN) data base.

There is also a Phased SSBI-PR that can be found in Notice-06-08, called PPR, available for $2,000 for rush and $1,775 for regular service. The President approved this investigation as a substitute for SSBI-PR on December 11, 2004, based upon recommendations from the personnel security community. That amendment altered the scope of periodic reinvestigations by eliminating the absolute requirement for coverage of references and neighborhoods in cases when no information of security concern is admitted or developed from other sources. Since October 1, 2005, this product has been available, and agencies can choose either product for Top Secret-level reinvestigations (Dillman, 2005).

c.   *Ordered Products*

Below is a list of expected investigation orders by all customers of OPM investigative services. The data was retrieved from a presentation sent from OPM to PERSEREC on April 23, 2007.

Table 10.   Scheduled Products

	FY 05	FY 06	FY 07
SECRET OR CONFIDENTIAL			
NACLC/ ANACI	428,216	554,054	766,978
TOP SECRET			
SSBI	80,333	85,998	108,244
SSBIPR	63,877	83,069	104,022
Fiscal Year 2007 are projections and the SSBIPR estimate includes PPR products			

Additionally, OPM's DoD weekly activity report ending October 14, 2006, established that Phased periodic reinvestigations account for approximately 51 percent of the total SSBI PRs and ANACIs account for only 5 percent of the secret or confidential requirements.

3.   **Unknown Costs**

According to a letter sent from the Department of Justice Chief Operations Officer on December 1, 2004, certain procedures must be followed when conducting a background investigation (Downs, 2004). The policy described the investigation process as follows:

a.   *The Subject Interview*

- Conducted under Contract by one of their investigative vendors
- Must call subject of investigation during business hours to schedule interviews
- Arrange to meet in government office space and present credentials
- Advise subject of rights under Privacy Act of 1974
- Limited to questions covered in the security forms

b. *Interviews with supervisors and co-workers*

- Six friends, references, neighbors, and former spouses may be interviewed to verify information provided on security forms and to obtain information regarding the subject's character, honesty, integrity, personal conduct, loyalty, susceptibility to blackmail, coercion, and emotional or mental health as it may affect national security.

- May also include reviews of military and federal personnel records, local and federal criminal records, and checks with federal agencies such as the Central Intelligence Agency, Immigration and Naturalization Service, DoD, etc.

- Individual credit check

- May re-contact the subject for clarification or additional information after all interviews have been conducted

- To help corroborate that investigators were following the aforementioned, five people were asked to validate the process. These individuals had been contacted by an OPM or a contracted background investigation agent. None of them could recall any major deviations from that process.

c. *Investigators*

PERSEREC report TR-95-003 estimated the cost of security investigations conducted by the Defense Investigative Service (DIS). As a part of their research, the authors reviewed actual Workload and Time Reports (WTR) for 1,000 to 1,600 of each investigation case type completed by investigators. For the present study, only the costs associated with the time spent by people being interviewed is documented, since the OPM agent's time is fully covered under the fees charged by OPM.

According to the PERSEREC report, Secret and Confidential adjudication decision are primarily based upon a review of the Personnel Security questionnaire, National Agency Check, and Credit checks. Most of this information is gathered electronically at relatively little cost (.05 hours).

Background investigations for Top Secret clearances required more time. The PERSEREC study determined that the average Subject interview time was 1.7 hours

for SSBIs and 1.24 hours for reinvestigations. In SSBI investigations, 10 percent of the cases required a second interview. The average number of other interviews for background investigations varies depending on the type of investigation. Additionally, this research only targets resources being paid by the government. Therefore, if the interviews consume someone time who is not part of government or a government contractor, their time was not included. In an interview with a PERSEREC researcher, it was learned that approximately three Other Interviews (OI) for an SSBI, four OIs for SSBI-PR, and two OIs for a PPR with government or contractor personnel are required. Each one of these interviews is expected to last .41 hours (Wiskoff and Crawford 7-14).

d.   *Interview with OPM Agent*

To assess whether the figures from the 1995 PERSEREC study were still valid, two OPM contractor investigators from USIS were interviewed. They noted that interviews, other than the subject interview, rarely take more than 30-45 minutes. Subject interviews typically ranged from one to two hours, and there were a small number of cases where a second interview of the subject was required. Since there are no major deviations from the PERSEREC report, the numbers based on that report will be used.

Additional Comments from USIS investigators were as follows:

- As much as 30 percent of the time required to complete an investigation is consumed by filling gaps left by omissions from the subject. Agencies should do more to prevent omissions.

- There are also many tools available to government investigators that are not available to contracted investigators. For instance, the State of California requires a contracted investigator to have a court order to gather information from the local police station, while the information is immediately provided upon request to the government employee counterpart.

- Turnover was higher than most of their other job experiences. Most government employees tend to have more experience, due in part to fewer turnovers of personnel. Some of these issues may explain why it took DSS 1,850 work years in 2005 to complete 40 percent of 1.5 million investigations (i.e., 324 investigations/ WY), while it OPM needs 8,000 work years to complete 95 percent of 1.9 million investigations (i.e., 226 investigations/ WY).

C. ADJUDICATORS

All government background investigations are examined by one of the adjudicative facilities prior to awarding a clearance.

1. Known Costs

The latest estimate of cost associated with Adjudication facilities was completed by PERSEREC in October 1991 and documented in PERS-TR-92-001. The ratio was 75 percent adjudicator to 25 percent support personnel (Crawford, Riedel, and Carney A-4). The workforce at the facilities included 87 percent civilian personnel and 13 percent military personnel.

Current PERSEREC reports state that the number of adjudicators is 455. It will be assumed that growth in work years for adjudicative personnel was mirrored proportionally by administrative support and management positions. Therefore, it was estimated that there are currently 569 FTE positions in adjudicative facilities.

Within the same report, PERSEREC reviewed over 800,000 cases. They documented how long an adjudicator spent on each investigation by clearance type and complexity. Table 11 documents their findings and provides a weighted average computation used to help determine the proportion of time spent on these resources. It will be assumed that the average time spent processing each type of background investigation has not changed.

Table 11.   Adjudicative Facilities Time Distribution

NACLC/ANACI	Number	Avg Hrs/Cs	Percentage	Weighted Average
Non Issue	323576	0.31	77.19%	0.239
Issue W/O Due-Process	76528	0.92	18.26%	0.167
Issue With Due Process	16013	2.13	3.82%	0.081
Administrative Closure	3090	10.84	0.74%	0.079
Total	419207		100.00%	0.568
SSBI	**Number**	**Avg Hrs/Cs**	Percentage	**Weighted Average**
Non Issue	77190	0.73	71.51%	0.522
Issue W/O Due-Process	24733	1.37	22.91%	0.313
Issue With Due Process	5109	3.86	4.73%	0.182
Administrative Closure	910	7.62	0.84%	0.064
Total	107942		100.00%	1.082
SSBI PR	**Number**	**Avg Hrs/Cs**	Percentage	**Weighted Average**
Issue W/O Due-Process	25965	1.29	79.64%	1.027
Issue With Due Process	5651	2.02	17.33%	0.350
Administrative Closure	987	16.71	3.03%	0.505
Total	32603		100.00%	1.883
PPR	**Number**	**Avg Hrs/Cs**	Percentage	**Weighted Average**
SSBI PR Non Issue Case	98171	0.37	100.00%	0.37

IV.   ANALYSIS

Table 12 documents the cost of each security clearance investigation by clearance type using activity-based Costing (ABC); within Tables 14-36, itemized descriptions of estimates by activities can be found. The objective of ABC is to better understand the costs of processes or activities in relation to cost drivers. Activities drive cost, and reduction in activities help reduce costs. ABC and continuous process improvement are two methods for identifying changes in operations that lead to more efficient and effective use of human, physical and financial resources.

Total activity-based costs for security clearances are summarized in Table 13 for illustrative purposes only. The major goal of this research was to identify the cost by activity level. Cost estimates for all "Unknown Costs" and "Other Costs" sub-categories presented below are also for illustrative purposes only. The samples used to help derive the mean values for each component affecting those costs were: 1) too small, 2) not selected randomly from across all people undergoing personnel security activities, and 3) too over-represented by people and activities present at the Naval Postgraduate School to warrant being considered common to the entire federal government. However, the formula used to calculate each estimate is provided, enabling readers to use alternative values for one or more of the components contained within that formula to recalculate the estimates of those costs, based upon values they believe are more applicable to their situation(s) of interest.

While it is recognized that many of the values presented in this chapter are imprecise estimates of the actual costs, they do indicate a rough order of magnitude of the potential impact of including the typically ignored activity-based labor values when calculating personnel security costs. Based upon the analysis presented in this chapter, it is believed that when those activity-based labor costs are taken into consideration, a better cost of personnel security activities is determined; that true cost is likely to be several times greater than considering only the fees charged by OPM for completing the applicable investigation.

Table 12.   Activity-Based Cost for the Security Clearance Process

SECURITY CLEARANCE COSTS USING OPM ESTIMATES						
KNOWN COSTS	**Confidential/Secret**		**Top Secret**	**Top Secret Reinvestigations**		**Table**
Product	ANACI	NACL	SBI	SBI-PR	PPR	
OPM FEE	$220	$192	$3,550	$2,400	$1,775	19
Security Manager	$85	$85	$161	$281	$55	15
OPM	$177	$177	$177	$177	$177	16
Adjudication	$61	$61	$116	$202	$40	18
Total	**$543**	**$515**	**$4,004**	**$3,060**	**$2,047**	19
UNKNOWN COSTS	**Confidential/Secret**		**Top Secret**	**Top Secret Reinvestigations**		**Table**
Security Manager	$256	$256	$487	$846	$166	21
JPAS Inquiry	$17	$17	$17	$17	$17	22
Security Clearance Questionnaire	$177	$177	$177	$147	$147	23-24
Fingerprints	$33	$33	$33	$33	$33	25
Lost Productivity While Waiting	$5,142	$5,142	$15,974	$0	$0	29-30
Subject Interviews	$0	$0	$73	$47	$47	26-27
Other Interviews	$0	$0	$49	$65	$33	28
Denied Clearances	$5	$5	$5	$5	$5	31
Total Unknown	**$5,630**	**$5,630**	**$16,915**	**$1,160**	**$447**	
Total cost per unit	**$6,173**	**$6,145**	**$20,919**	**$4,220**	**$2,494**	
USING PROJECTIONS FROM DATA THROUGH 2Q2007						
KNOWN COSTS	**Confidential/Secret**		**Top Secret**	**Top Secret Reinvestigations**		**Table**
Product	ANACI	NACL	SBI	SBI-PR	PPR	
OPM FEE	$220	$192	$3,550	$2,400	$1,775	19
Security Manager	$116	$116	$221	$384	$76	15
OPM	$248	$248	$248	$248	$248	16
Adjudication	$83	$83	$159	$276	$54	18
Total	**$667**	**$639**	**$4,178**	**$3,308**	**$2,153**	19
UNKNOWN COSTS	**Confidential/Secret**		**Top Secret**	**Top Secret Reinvestigations**		**Table**
Security Manager	$350	$350	$667	$1,159	$228	21
JPAS Inquiry	$24	$24	$24	$24	$24	22
Security Clearance Questionnaire	$177	$177	$177	$147	$147	23-24
Fingerprints	$33	$33	$33	$33	$33	25
Lost Productivity While Waiting	$5,142	$5,142	$15,974	$0	$0	29-30
Subject Interviews	$0.00	$0.00	$73	$47	$47	26-27
Other Interviews	$0.00	$0.00	$49	$65	$33	28
Denied Clearances	$5	$5	$5	$5	$5	31
Total Unknown	**$5,731**	**$5,731**	**$17,002**	**$1,480**	**$517**	
Total Known/Unknown	**$6,398**	**$6,370**	**$21,180**	**$4,788**	**$2,670**	
OTHER COSTS						
Other Costs	Per Unit	Total		Notes		Table
Antiterrorism Per Member	$65	$210,324,335		3,262,702 estimated briefings		32

Individual Force Protection Plan	$141	$113,480,293	862,625 plans written	33
Non Secure Travel Briefs	$100	$78,977,132	793,218 briefs	34
Secure Travel Briefs	$281	$2,250,165	8,013 briefs	35
Foreign Country Clearance	$64	$51,513,978	801,232 country clearances	36
Total Cost per person	**$140**	**$465,545,903**	**3,262,702 estimated people**	

Table 13.   Total Cost of the Security Clearance Program

Using OPM estimates			
Product	**Products**	**Cost**	**Total**
ANACI	38349	$6,173	$236,728,377
NACL	728629	$6,145	$4,477,425,205
SSBI	108244	$20,919	$2,264,356,236
SSBI-PR	50970	$4,220	$215,093,400
PPR	53051	$2,494	$132,309,194
Total Security Clearance Cost			**$7,325,912,412**
Other Costs			
Antiterrorism Per Member	3262702	$65	$210,324,335
Individual Force Protection Plan	862625	$141	$113,480,293
Not Secure Travel Briefs	793218	$100	$78,977,132
Secure Travel Briefs	82313	$281	$2,250,165
Foreign Country Clearance	801232	$64	$51,513,978
Total Cost of Other Products			**$465,545,903**
Total Cost			**$7,791,458,315**
Using Projections From Data Trough 2007			
ANACI	26077	6,398	$166,840,646
NACL	495468	$6,370	$3,156,131,160
SSBI	84430	$21,173	$1,787,636,390
SSBI-PR	44344	$4,781	$212,008,664
PPR	46154	$2,663	$122,908,102
Total Cost			**$5,445,524,962**
Other Costs			
Antiterrorism Per Member	3262702	$65	$210,324,335
Individual Force Protection Plan	862625	$141	$113,480,293
Not Secure Travel Briefs	793218	$100	$78,977,132
Secure Travel Briefs	8013	$281	$2,250,165
Foreign Country Clearance	801232	$64	$51,513,978
Total Cost of Other Products			**$465,545,903**
Total Cost			**$5,911,070,865**

A.   KNOWN COSTS

As noted in the introduction chapter, "known costs" are costs included in the PB for personnel security investigation requirements. These costs can easily be identified to estimate the cost of the personnel security clearance program.

1.   Security Manager Known Costs

Table 14 documents data gathered and estimated for "security manager's" known costs. It was estimated that there are 6,024 work years performed by security managers to serve the estimated 2.5 million people who hold a security clearance. This estimate was based on the assumption that the government ratio of supported personnel to security manager was one security manager work year per 415 people supported (see Chapter I.B). It was also assumed that approximately 80 percent of those work years are performed by additional duty security managers, while 20 percent of the work is accomplished by full-time security managers. Therefore, only 20 percent, or 1,205 work years, will be considered a known cost. It was assumed that the proportion of military to civilian security managers would mirror the federal employment workforce, or 57.2 percent civilians and 42.8 percent military (see Chapter II.B.2). The estimated number of civilian and military authorizations was computed, the costs per each type of authorization, previously computed in Chapter II, was multiplied by the number of authorizations to determine the total costs. As a result, the total estimated wage requirement was $107.42 million. It must be noted that any change in the population supported will change this estimate.

The support requirement (i.e., cost to provide supplies and electricity) was estimated at 32.56 percent of the wage requirement (see Chapter II.B.2) resulting in an estimated support requirement of $34.98 million. The total estimated requirement amounts to $142.4 million. However, since the NPS security manager estimated that only 70 percent of his people and baseline are used toward Security Clearance investigation support, only $99.68 million was distributed to the clearance process.

It will also be assumed that the percentage of time devoted to each case will mirror the time spent by adjudicating facilities depicted on Table 11. The NPS security

manager stated that this was a reasonable assumption. Therefore, the percentage of total labor resources that security managers spent supporting each type of security clearance was calculated using the average time spent on each product reported in Table 11, and the anticipated workload projected by OPM in Table 10. Finally, the total $99.68 million previously identified as the total known cost for security management duties, was allocated according to the percent of estimated resources that security managers spent on each type of investigation. If OPM 2007 investigation order estimates are accurate, the estimate is documented within the first part of Table 15. However, if current submission trends continue, only 696,474 products could be submitted (see Chapter II.B.2). In this case, the second part of Table 15 is a better estimate.

Table 14.   Total Security Manager Known Costs

Estimated SM	Military Wage	Estimated %	Total Military Pay
1,205	$77,843.20	42.80%	$40,146,851
Estimated SM	**Civilian Wage**	**Estimated %**	**Total Civilian Pay**
1,205	$97,601.54	57.20%	$67,272,838
Total Labor Pay			**$107,419,689**
Estimated Support	**Support Estimated %**	**Total Payroll**	**Estimated Cost**
32.56% of Labor Pay	32.56%	**$107,419,689**	$66,613,757.48
Total Labor/Support			**$142,395,540**
Allocable Confidential/Secret/Top Secret			
Total Labor/Support	**%**		**Total Cost**
$142,395,540	70%		**$99,676,878**
Note 1: Only 70% of the total cost (Chapter III.A) can be directly associated with the investigative products within the scope of this research			

Table 15.   Estimated Activity-based Security Manager Known Costs

Security Manager Known Cost Using OPM Estimated Workload				
Product	**Products**	**Time Spent**	**Total SM Cost**	**Per Unit**
ANACI/NACL	766978	65.19%	$64,979,356	$85
SSBI	108244	17.52%	$17,463,389	$161
SSBI-PR	50970	14.35%	$14,303,632	$281
PPR	53051	2.93%	$2,920,532	$55
Using Estimates of Actual Submissions as of 2Q 2007 (see Note 1)				
Product	**Products**	**Time Spent**	**Total SM Cost**	**Per Unit**
ANACI/NACL	521545	60.69%	$60,493,897	$116
SSBI	84430	18.72%	$18,659,511	$221
SSBI-PR	44344	17.10%	$17,044,746	$384
PPR	46154	3.50%	$3,488,691	$76
Note 1: 2Q 2007 trends from PERSEREC actual data depict that submissions are lower than estimates. If trend continues the ANACI/NACL will be overstated by 32%, SSBI by 22% and reinvestigations by 13%				

2.   OPM Known Costs

Table 16 documents information gathered from the OPM budget as allocated by OPM. The OPM investigative services division's budget requested $725 million for Fiscal Year 07 (29 percent for personnel, 57 percent for contracts, and 14 percent for baseline (see Chapter II.B.2). The $210.25 million for personnel cost and the $101.5 million baseline cost were added, resulting in $311.75 million for combined OPM personnel and baseline support. However, since only 55.45 percent of the total 1,765,934 products or 974,244 products (see ChapterII.B.2) resulted in security clearance adjudication, only $172.87 million was allocated.

The $413.25 million for contract cost was eliminated from the cost estimate due to lack of data to support a direct relationship to the investigative products. By distributing the $311.75 million estimate among the 979,244 investigative products it was concluded that each investigative product cost OPM approximately $177 in labor and support baseline. It should be noted that this amount is received by the Federal Investigative Services Division (FISD) as a direct appropriation from Congress and needs

to be added to the funding FISD receives on a fee for service basis from its customers, on a reimbursable basis. As noted in prior sections, the per unit cost would increase to $248 if the current submission trends continue (see Chapter II.B.2)

Table 16.   Allocation of Budgeted OPM Known Costs

Personnel Cost	Contract Cost	Baseline Cost	Total Cost
29%	57%	14%	100%
Personnel Cost	**Contract Cost**	**Baseline Cost**	**Total Cost**
$210,250,000.00	$413,250,000	$101,500,000	$725,000,000
Total OPM Personnel & Baseline to be allocated			**$311,750,000**
Allocation of OPM Costs to Confidential/Secret/Top Secret			
OPM Products	**Cost Per Product**	**Total Products**	**Total Cost**
1,765,934	**$177**	979,244	**$172,871,306**

3.   Adjudicative Facilities Known Costs

There are 455 Adjudicators as described in Chapter III.C.1. It can be assumed that there are 114 "other personnel" if we use the 1991 relationship of adjudicators to "other personnel" that was documented in PERS-TR-92-001. The proportion of military to civilian personnel from the same report (see Chapter II.B.2) showed 87 percent Civilian and 13 percent Military FTEs. The total payroll cost was estimated at $43.23 million for adjudicators and $10.83 million for other personnel and the support funding was estimated at $17.6 million (see Chapter II.B.1) using OPM as a standard. The total $71.68 million labor and support costs (calculated in Table 17) is allocated to all products because the entire cost will result in clearance decisions. Table 11 data was used to allocate labor and support costs to each type of clearance in Table 18. As a result, it was estimated that the adjudicative facilities spend from $40 for a PPR up to $202 for an SSBI-PR. However, if current submission trends continue, the cost could be as low as $54 for a PPR and up to $276 for an SSBI-PR.

Table 17.   Adjudication Estimated Known Costs

Adjudicators	Military Wage	Civilian	Total Military Pay
455	$77,843	13%	$4,604,425
Adjudicators	**Civilian Wage**	**Estimated %**	**Total Civilian Pay**
455	$97,601	87%	$38,635,570
Total Adjudicator Wages			**$43,239,995**
Other Personnel	**Military Wage**	**Civilian**	**Total Military Pay**
114	$77,843	13%	$1,153,636
Other Personnel	**Civilian Wage**	**Estimated %**	**Total Civilian Pay**
114	$97,602	87%	$9,680,121
Total Other Personnel Wages			**$10,833,757**
Estimated Support	**Support Estimated %**	**Total Payroll**	**Estimated Cost**
32.56% of Labor Pay	32.56%	$54,073,752	$17,606,414
Total Labor/Support			$71,680,166
Allocable Confidential/Secret/Top Secret			
OPM Products	**Cost Per Prod**	**Total Products**	**Total Cost**
979,244	$73	979,244	**$71,680,166**

Table 18.   Adjudicative Costs Allocation to Type of Clearance

Product	Products	Time Spent	Total SM Cost	Per Unit
ANACI/NACL	766978	65.19%	$46,726,866	$61
SSBI	108244	17.52%	$12,558,365	$116
SSBI-PR	50970	14.35%	$10,286,104	$202
PPR	53051	2.93%	$2,103,096	$40
Using Estimates of Actual Submissions as of 2Q 2007 (see note 1)				
Product	**Products**	**Time Spent**	**Total SM Cost**	**Per Unit**
ANACI/NACL	521545	60.69%	$43,502,692	$83
SSBI	84430	18.72%	$13,418,527	$159
SSBI-PR	44344	17.10%	$12,253,724	$276
PPR	46154	3.50%	$2,505,724	$54
Note 1: 2Q 2007 trends from PERSEREC actual data depict that submissions are lower than estimates. If trend continues the ANACI/NACL will be overstated by 32%, SSBI by 22% and reinvestigations by 13%				

4. Summary of Allocations of Known Costs

To provide an overview of prior calculations, Table 19 consolidates the cost data from Tables-14-18.

Table 19.   Total Cost by Activity and Type of Clearance

USING OPM ESTIMATES					
	Confidential/Secret		Top Secret	Top Secret Reinvestigation	
Product	ANACI	NACL	SSBI	SSBI-PR	PPR
OPM FEE	$220	$192	$3,550	$2,400	$1,775
SM	$85	$85	$161	$281	$55
OPM	$177	$177	$177	$177	$177
Adjudication	$61	$61	$116	$202	$40
Known Cost	$543	$515	$4,004	$3,060	$2,047
USING PROJECTIONS FROM DATA THROUGH 2Q 2007					
	Confidential/Secret		Top Secret	Top Secret Reinvestigation	
Product	ANACI	NACL	SSBI	SSBI-PR	PPR
OPM FEE	$220	$192	$3,550	$2,400	$1,775
SM	$116	$116	$221	$384	$76
OPM	$248	$248	$248	$248	$248
Adjudication	$83	$83	$159	$276	$54
Known Cost	$667	$639	$4,178	$3,308	$2,153

B.   UNKNOWN COSTS

As noted in the introduction chapter, "unknown costs" are costs that are not identified in the PB for personnel security investigation requirements. These costs are not easily available to provide an estimated cost of the program. Most of these costs are budgeted by the government agencies that require cleared people and they consume resources meant to provide capabilities.

1.   Security Manager Unknown Costs

It was assumed in Chapter III that 80 percent or 4,819 of security managers' work years authorizations are not in the PB specifically for personnel security requirements.

The distribution of civilian and military personnel used for the known costs estimates in Table 14 was also used to estimate the current labor cost for security manager unknown labor costs. $269.05 million in civilian labor, $160.56 million for military labor, and a total of $429.61 million in labor cost were estimated. Additionally, support cost was estimated to be 32.56 percent (see Chapter II.B.1.b) of labor cost, resulting in an estimate of $139.88 million. As reported in Table 20, the total security manager labor and support cost was estimated at $569.5 billion. However, since only 70 percent of requirements consumed in security manager duties are to support clearances (see Chapter II.B.2), only that proportion of the total cost, or $300.73 million, will be allocated in Table 21. The allocation percents for the different types of clearances in Table 21 are based upon the same relationships in Table15 for known costs.

Table 20.   Security Manager Unknown Costs

Estimated SM	Military Wage	Estimated %	Total Military Pay
9,181	$77,843.20	42.80%	$160,563,323
Estimated SM	**Civilian Wage**	**Estimated %**	**Total Civilian Pay**
9,181	$97,601.54	57.20%	$269,050,992
Total Labor Pay			**$429,614,315**
Estimated Support	**Support Estimated %**	**Total Payroll**	**Estimated Cost**
32.56% of Labor Pay	32.56%	**$429,614,315**	$139,882,315
Total Labor/Support			**$569,496,736**
Total Estimate Cost	70.00%		**$300,730,020**
Note 1: Time Spent was calculated using 70% of total SM Costs			

Table 21.   Allocation of Security Manager Unknown Costs Allocated

Product	Products	Time Spent	Total SM Cost	Per Unit
ANACI/NACL	766978	65.19%	$196,045,901	$256
SSBI	108244	17.52%	$52,687,900	$487
SSBI-PR	50970	14.35%	$43,154,758	$846
PPR	53051	2.93%	$8,811,390	$166
Using Estimates of Actual Submissions as of 2Q 2007 (see Note 1)				
Product	**Products**	**Time Spent**	**Total SM Cost**	**Per Unit**
ANACI/NACL	521545	60.69%	$182,513,050	$350
SSBI	84430	18.72%	$56,296,660	$667
SSBI-PR	44344	17.10%	$51,424,834	$1,159
PPR	46154	3.50%	$10,525,551	$228
Note 1: 2Q 2007 trends from PERSEREC actual data depict that submissions are lower than estimates. If trend continues the ANACI/NACL will be overstated by 32%, SSBI by 22% and reinvestigations by 13%				

2. Joint Personnel Adjudication System (JPAS) Inquiry Cost

JPAS is the system used by all security managers to validate current security clearance status. In Table 8, which shows the average time spent accomplishing each activity by type of investigation, it was reported that approximately 10 minutes are spent "in-processing" with the security manager. During this time a JPAS inquiry is conducted to assess clearance status. It was assumed that a military service member moves approximately every three years. Therefore, only 33.33 percent of the cleared military population (i.e., 465,016 people) was used in the calculations.

Another factor was the cost of each minute of military labor, which was estimated at $.6237 (see Chapter III.B.1.a). It was also assumed that any time a requirement was not performed at the traveler's duty location it would take 60 minutes of movement time (see Chapter III.B.2). The 465,016 cleared people who "in process" every year was first multiplied by 70 minutes per person. The result was then multiplied by $.6237 per minute to yield a total cost if 100 percent of the time spent. However, only 83.42 percent of the time spent was duty time (see Table 8, where clearance holders quantified the percentage of duty time spent on each activity). Therefore, that result was multiplied by 83.42 percent. As seen in Table 22 the final JPAS cost estimate was $16.94 million. Dividing this number by the 979,244 expected investigation orders that will lead to a clearance, it was estimated that each security clearance adjudicated carries a JPAS cost of $17. There was not sufficient data to provide an estimate for civilian JPAS inquiry requirements. That part of the cost was ignored in the estimates provided in Table 22. If current trends continue and only 696,474 investigations are ordered, costs could be as high as $24.

Table 22.   Estimated Military Labor Cost of JPAS Inquiries

Employee	Percentage	Time	In Processing	P/M Cost	Duty Time	Total Cost
Military	0.3333333	70	465,016	$0.6237	0.8342	$16,936,038
Military service members	1,395,048					
Total Cost						$16,936,038
Unit Cost (based on 979,244 products)						**$17.30**

3. SSBI/ANACI/NACL Questionnaire

It is assumed that the SF 86 submitted for an SSBI and ANACI/NACL are for new hires or upgrades. The time it takes the filer to complete this activity is reflected in Table 8. It takes the filer 4.46 hours to complete the form for new investigations and 4.33 hours for upgrades. A weighted average of the two numbers was used in the calculations. An average of 264 minutes plus the 60 minutes needed for travel time to provide the security manager (see Table 10) with the signed document was multiplied by the total number of SSBI and ANACI/NACL investigations anticipated: 875,222 OPM products (estimate provided by OPM). Finally, the product was multiplied by 83.42 percent (the average percentage of duty time spent as documented in Table 8). The total cost of this process is estimated at $154.9 million or $177 per unit. It should be noted that if individuals could provide electronically signed SF 86 forms, the cost would have been only $126.21 million because applicants would not have to stop what they were doing to physically deliver the documents to the security manager (saves 60 minutes per).

Table 23.   Estimated Labor Cost of Completing SF 86 for Initial Investigations

Employee	Percentage	Time	Products	P/M Cost	Duty Time	Total Cost
Military	0.292911041	324	256,362	$0.6237	0.8342	$43,216,034
1,395,048						
GS Civilians	0.392141688	324	343,211	$0.7821	0.8342	$72,550,218
1,867,654						
Contractors	0.314947272	324	275,649	$0.5252	0.8342	$39,128,751
1,500,000	100.00%					
4,762,702						
OPM Products	875,222					
Total Cost						$154,895,003
Cost Per Unit						**$177**

4. Reinvestigation Questionnaire

SSBI-PR and PPR clearances still require the clearance holder to complete the SF 86 security clearance questionnaires. OPM estimates a 2007 requirement of 104,022 SSBI-PRs and PPRs as seen on Table 10. Table 8 reported that the average

reinvestigation required only 3.33 hours, and that 86.67 percent of time spent was duty time. The same procedure to estimate costs for completing the SF 86 was followed as for the initial SSBI and ANACI/NACL, which is presented in Table 23. It is estimated in Table 24 that the total cost of this process is $15.29 million, or $147 per questionnaire. Again, note that, without having to provide the security manager with a signed copy, the cost would have been reduced to $11.75 million (again saves 60 minutes).

Table 24.   Cost Estimates for Completing SF 86 for Reinvestigations

Employee	Percentage	Time	Products	P/M Cost	Duty Time	Total Cost
Military	0.292911041	259	30,469	$0.62	0.8667	$4,265,847
1,395,048						
GS Civilians	0.392141688	259	40,791	$0.78	0.8667	$7,161,419
1,867,654						
Contractors	0.314947272	259	32,761	$0.53	0.8667	$3,862,392
1,500,000	100.00%					
4,762,702						
OPM Products	104,022					
Total Cost						$15,289,657
Cost Per Unit						**$147**

5.   Cost of Fingerprinting

As discussed earlier, approximately one hour is required to travel to and from the fingerprinting location.   This estimate includes travel time and the actions required. In Table 25 estimates are computed using the same methods for calculating personnel requirements and the cost per minute for that activity as used for previous JPAS inquiries. The total cost estimate for fingerprinting is $32.09 million, or $33 per required prints. Note that eliminating the new requirement of fingerprinting for reinvestigations would reduce the number of prints required from 979,244 to 875,222 (subtracting the 104,022 reinvestigations) and the cost would be only $28.68 million.

Table 25.   Estimating Cost for Fingerprints

Employee	Percentage	Time	Products	P/M Cost	Duty Time	Total Cost
Military	0.292911041	60	286,831	$0.6237	0.8342	$8,954,139
1,395,048						
GS Civilians	0.392141688	60	384,002	$0.7821	0.8342	$15,032,031
1,867,654						
Contractors	0.314947272	60	308,410	$0.5252	0.8342	$8,107,275
1,500,000	100.00%					
4,762,702						
OPM Products	979,244					
Total Cost						**$32,093,445**
Cost Per Unit						**$32.77**

6.   Estimating Cost of Investigator Subject Interviews

Subject interviews are required for SSBI, SSBI-PR, and PPR background investigations. These interviews are normally conducted at a government facility and, according to surveyed personnel, the investigators go to great lengths to make it as convenient as possible. Therefore, 60 minutes will not be added for travel time.

OPM estimates that approximately 108,244 SSBI investigations and 104,022 SSBI-PR investigations will be requested in 2007. Approximately 51 percent of TS reinvestigations are requested under PPR investigative procedures and pricing. PERSERC TR-95-003 states that most SSBI subject interviews take 1.7 hours and most SSBI-PR and PPR interviews take about 1.24 hours. The report noted that 10 percent of SSBI subjects require a second interview. Therefore, the total number of OPM subject interviews for SSBI was increased to 110 percent of the total OPM projection. The costs of SSBI subject interviews are estimated in Table 26 using the following method: The amount of products used for Military, GS Civilians, and Contractors was estimated by multiplying the 119,068 expected subject interviews for SSBI investigations (108,244 SSBI investigations multiplied by 110 percent) by the percentage of employees working in each category. The result was first multiplied by the required minutes, and then that result was multiplied by the cost per minute for each category. Finally, the cost was divided by the number of actual OPM investigations. The costs for SSBI, SSBI-PR and

PPR was estimated in Table 27 using the same method as used for SSBI, but without adding the 10 percent because PERSERC TR-95-003 only identified that increment for SSBIs..

Table 26. Estimated Cost of SSBI Subject Interview

Employee	Percentage	Subject Interview/min	Products	P/M Cost	Total Cost
Military	0.292911041	102	34,876	$0.6237	$2,218,749
1,395,048					
GS Civilians	0.392141688	102	46,692	$0.7821	$3,724,792
1,867,654					
Contractors	0.314947272	102	37,500	$0.5252	$2,008,904
1,500,000	100.00%				
4,762,702					
OPM Products	119,068				
Total Cost					$7,952,445
Cost Per OPM Product		108,244			$73.47
Note 1: SSBI interview time in minutes is computed by multiplying 1.7 hours by 60 minute per hour					
Note 2: 10% of cases require a second interview; therefore the total 108,244 OPM SSBI investigations were multiplied by 1.1 subject interviews per investigation					

Table 27. Estimated Cost of Subject Interview for SSBI-PR and PPR

Employee	Percentage	Subject Interview/Minute	Products	P/M Cost	Total Cost
Military	0.292911041	75	30,469	$0.6237	$1,415,771
1,395,048					
GS Civilians	0.392141688	75	40,791	$0.7821	$2,392,719
1,867,654					
Contractors	0.314947272	75	32,761	$0.5252	$1,290,473
1,500,000	100.00%				
4,762,702					
OPM Products	104,022				
Total Cost					$5,098,964
Cost Per OPM Product		108,244			$47.11
Note 1: SSBI interview time in minutes is computed by multiplying 1.24 hrs by 60 minutes per hour.					

7. Estimated Cost of Investigator, Other Interviews (OI)

As noted earlier, a PERSEREC researcher commented on the relationship between the type of clearance and the approximate number of OIs needed for government

employee or contractor personnel security investigations. For this research, it is only important to capture the cost of interviews for personnel who are directly or indirectly paid by the government. While there is a cost for the time spent by "others," it is not a part of the government's costs.

Within the standards mentioned above, approximately three OIs involving government paid employees or contractors are typically needed for an SSBI investigation, four OIs for SSBI PR, and two OIs for PPR investigations. PERSEREC TR-95-003 calculated that each one of these investigations takes about 24.6 minutes. The cost of each interview for military, GS civilians and contractors was calculated and is displayed in the upper section of Table 28. The number of interviews involving federal employees or contractors required for each type of investigation was multiplied by the total number of investigations performed in each category. This is displayed in the lower section of Table 28. Each OI cost the federal government $16 for the time spent by the interviewee, and the total cost per investigation typically ranged from as low as $33 for PPRs, up to $65 for SSSBI-PRs, which is twice as much.

Table 28.   Estimated Cost for Other Interviews

Employee	Percentage	Subject Interview/min	Products	P/M Cost	Total Cost
Military	0.292911041	25	30,469	$0.6237	$475,090.88
1,395,048					
GS Civilians	0.392141688	25	40,791	$0.7821	$797,573.12
1,867,654					
Contractors	0.314947272	25	32,761	$0.5252	$430,157.77
1,500,000	100.00%				
4,762,702					
OPM Products	104,022				
Total Cost					$1,702,821.77
Cost Per Interview		104,022			**$16.37**
Product	Interviews	Amount	Cost	Total Cost	Per Unit Cost
SSBI	3	108,244	$16.37	$5,315,805.50	$49.11
SSBI-PR	4	50,971	$16.37	$3,337,545.08	$65.48
PPR	2	53,051	$16.37	$1,736,871.01	$32.74
Total		212,266		$10,390,221.59	

8.   Estimating the Cost of Waiting for a Clearance

The average time waiting for a clearance from the 2007 Security Clearance Oversight Group report was presented in Table-6. In 2005, 347 days were needed for a Top Secret clearance, 155 days for a Secret clearance, and 482 days for reinvestigations. The proportion of civilians and military service members waiting for clearances was computed according to the assumption that the proportion of military to civilian subjects reflects the current percentage of the federal workforce. Also, delays for initial clearances for military personnel often did not result in any loss in productivity until the 120th day. Therefore, the time spent waiting for a clearance for military service members was computed by subtracting 120 days, and then multiplying the days waiting for a clearance by .7151 to account for weekends (the products measured in minutes).

As was discussed in Chapter II, civilian productivity losses often commenced almost immediately after they were hired and submitted their personnel security questionnaire. Therefore, the total number of days waiting for the clearance was used for civilian members. The products were then multiplied by the applicable cost per minute of time required for military and civilians. Their relative productivity loss during the waiting period was computed using a weighted average of inputs by users and supervisors. The cost for the lost productivity for each type of security clearance was calculated by multiplying four items: 1) the percent of loss in productivity; 2) the amount of time typically spent waiting in a less productive status for that type of clearance; 3) the mean cost per minute for those employees; and 4) the number of investigations of that type being conducted each year. The resulting estimates are presented in Table 29 for Secret Security clearances and in Table 30 for Top Secret clearances. The total cost for lost productivity while waiting for a Secret clearance is $4,499.97 million or $5,142 for each clearance.

As seen in Table 30, for Top Secret clearances the total cost for lost productivity is estimated at $3,459.2 million or $15,974 for each clearance.

According to all research sources, there is rarely any time lost while waiting for a reinvestigation. Therefore, the cost of lost productivity due to reinvestigations is not examined.

Table 29.　Estimated Cost of Lost Productivity While Waiting for a Secret Clearance

Employee	Percent	Time	Products	P/M Cost	Product	Total Cost
Military	0.2929	12013	256,362	$0.6237	0.2444	$469,448,312
1,395,048						
GS Civilians	0.3921	61438	343,211	$0.7821	0.2444	$4,030,526,644
1,867,654						
OPM Products	875,222					
0.7151						
Total Cost						$4,499,974,955
Cost Per Unit						**$5,142**
Note 1: Time was calculated by multiplying the days by .7150684 to account for week ends.						
Note 2: Military time spent waiting for a clearance was reduced by 120 days.						
Note 3: Productivity was computed by weighted average of inputs from security clearance holders and supervisors documented in Chapter 3.						

Table 30.　Estimated Cost of Lost Productivity while Waiting for an SSBI Clearance

Employee	Percent	Time	Products	P/M Cost	Product	Total Cost
Military	0.2929	25972	31,706	$0.6237	0.69444	$356,660,851
1,395,048						
GS Civilians	0.3921	59534	42,447	$0.7821	0.69444	$1,372,477,635
1,867,654						
4,762,702						
OPM Products	108,244					
0.7151						
Total Cost						$1,729,138,486
Cost Per Unit						$15,974
Note 1: Time was calculated by multiplying the days by .7150684 to account for week ends (additionally 1/2 of the time was eliminated to estimate the impact of interim clearances).						
Note 2: Military time spent waiting for a clearance was reduced by 120 days.						
Note 3: Productivity was computed by weighted average of inputs from security clearance holders and supervisors documented in Chapter 3.						

9. Estimated Cost of Denied Clearances

Another labor cost was that due to denied clearances. In Chapter III.A.3 it was reported that one supervisor spent one hour a week for six months to provide additional oversight to a service member who was denied a clearance. The OPM investigator interviewed estimated that about 1 percent of initial clearance requests are denied. It was assumed that this cost category was most relevant to government employees. Therefore, of the approximate 599,573 investigations conducted on that population, 5,995 are expected to result in a denied clearance. Time spent was computed by multiplying the one hour per week for 26 weeks (six months) by 60 minutes per hour, resulting in 1,115 minutes per person. That result, in turn, was multiplied by the pertinent labor cost per minute. Table 31 presents costs applicable to this requirement. The total cost estimate is $4,775.17 million or $797 for each denied clearance. Spread among all 979,244 clearances, this will add another $5 to the cost of each clearance request.

Table 31. Estimated Labor Cost for Denied Clearances

Employee	Percentage	Time	Products	P/M Cost	Duty Time	Total Cost
Military	0.427574446	1115	2,563	$0.6237	1	$1,782,590.31
1,395,048						
GS Civilians	0.572425554	1115	3,432	$0.7821	1	$2,992,577.14
1,867,654						
3,262,702						
Denied Clearances	5,995		OPM Products	979,244		
Total Cost						$4,775,167.44
Cost Per Unit						$5
Note 1: Time was calculated by multiplying the days by .7150684 to account for week ends.						

10. Estimated Labor Cost for Antiterrorism Training

It was stated that this training takes about 60 minutes and is required once a year for all personnel holding a security clearance. Therefore, the frequency was equal to the total workforce. The cost estimate was computed by multiplying the number of people receiving the training by the time spent in the training, and then multiplying by the pertinent labor cost per minute. The labor cost estimates are presented in Table 32. The

total cost estimate is $139.85 million or $43 per person. Contractor costs for this training were not included because the data was not available.

In addition to labor cost for personnel undergoing antiterrorism training, security managers also devote time to antiterrorism training. Recall that 30 percent, or $213.58 million of the total security manager's costs, were identified as part of travel and other requirements. Of this amount, 33 percent, or $70.5 million, will be added to antiterrorism training because it was considered a significant workload by security managers. Therefore, the total cost of antiterrorism training could be as much as $65 per briefing.

Table 32.   Estimated Labor Cost for Antiterrorism Training

Employee	%	Time	Freq	P/M Cost	Total Cost
Military	42.76%	60	1,395,048	$0.6237	$52,205,486.26
1,395,048					
GS Civilians	57.24%	60	1,867,654	$0.7821	$87,641,531.60
1,867,654					
3,262,702					
Training	3,262,702.00				
Training Costs					$139,847,018
Cost Per Unit					$43
Unknown SM* Cost					$70,477,335
Total Cost					$210,324,353
Cost Per Unit					**$64.46**
Note 1: Required for everyone once a year. * Security Manager Costs					

11.   Estimated Labor Cost for Individual Force Protection Plan

An Individual Force Protection Plan (IFPP) takes about 15 minutes to complete. However, 60 minutes were added to this activity because the person travels to turn in a hard copy to the security manager's office. The cost of the labor time spent on the IEPP was not included within the other documents required per trip because it is assumed that the member will be able to submit all the documents related to their travel at one time. As previously noted, the NPS security manager receives about 12 such requirements per

week from the 2,541 NPS population. Therefore, a ratio of .246 annual requirements per person was estimated and applied to the total federal workforce, estimating a total of 802,625 requirements costing $43 million, or $54 per person (see Table 33).   An additional 33 percent of the total security manager costs of $213.58 million or $70.5 million was added because as mentioned in the antiterrorism section 30 percent of their time could be associated with travel and other requirements, which is a significant workload for the security managers. Therefore, the total IFPP unit cost could be as much as $141.

Table 33.   Estimate IFPP Costs

Employee	Percentage	Time	Travel	P/M Cost	Total Cost
Military	0.4275744	75	343181.81	0.6237	$16,053,187
1395048					
GS Civilians	0.5724256	75	459442.88	0.7821	$26,949,771
1867654					
3262702					
Products	802,625				
Member Cost					$43,002,958
Cost per Unit					$53.58
SM Unknown Costs					$70,477,335
Total Cost					$113,480,293
Cost Per Unit					**$141.39**
Note 1: Frequency was computed by using SM (Security Manager) estimate of 12 a week for a 2,541 population served. It was concluded that there would be .246 OCONUS travel for every member.					

12.   Estimated Cost of Non-Secure Travel Briefings

A non-secure travel brief takes about 15 minutes and is accomplished electronically. The number of briefings per NPS member was applied to the entire federal work force. Therefore, the national requirement for this activity would be .243117 multiplied by the number of cleared people in the entire national government workforce. The total 793,218 briefings were multiplied by 15 minutes, and then by the respective average cost per minute for military and civilian employees. The final 11

percent of security manager's unknown cost was distributed 10 percent toward Non-Secure and 1 percent toward Secure briefings. The total cost of Non-Secure briefings was estimated at $78.98 million and a unit cost of $100 per briefing, which includes the security manager's labor.

Table 34.   Estimated Labor Cost for Non-Secure Travel Briefs

Employee	Percentage	Time	Travel	P/M Cost	Total Cost
Military	0.4275744	15	339,160	$0.62	$3,173,010
1,395,048					
GS Civilians	0.5724256	15	454,058	$0.78	$5,326,787
1,867,654					
3,262,702					
Briefings	793,218				
Total Cost					$8,499,797
Cost Per Unit					$10.72
SM Unknown Costs					$70,477,335
Total Cost					$78,977,132
Cost Per Unit					**$100**
Note 1: Frequency was computed by using SM (Security Manager) estimate of 12 a week for a population served of 2,372. It was concluded that there would be .243117 for every member that would require e-mail brief					

13.   Estimated Labor Cost for Secure Travel Briefings

A secure travel brief takes about 20 minutes and is conducted in person by the security manager. Based on security manager inputs, only 1 percent of all briefings were classified. Therefore, it was estimated that 8,013 classified briefs were required. The total requirement was multiplied by 20 minutes, using the appropriate ratio of military to civilian personnel, and multiplied by their costs per minute. Sixty minutes of travel time were not added because it was assumed that individuals would turn in their documents at the time they received their briefing. Additionally, 1 percent of the unknown security manager cost was applied to this requirement. The total labor cost for the Secure briefings was $2.14 million and the cost per unit was $281 per briefing, including the cost of the security manager.

Table 35.   Estimated Labor Costs for Secure Travel Briefs

Employee	Percentage	Time	Travel	P/M Cost	Total Cost
Military	0.4275744	20	3,426	$0.62	$42,739
1,395,048					
GS Civilians	0.5724256	20	4,587	$0.78	$71,749
1,867,654					
3,262,702					
Briefings	8,013				
Total Cost					$114,488
Cost Per Unit					$14.29
SM Unknown Costs					$
Total Cost					$2,250,165
Cost Per Unit					$281
Note 1: Frequency was computed by using SM (Security Manager) estimate of 12 a week for a population of 2,372 served. It was concluded that there would be .002456 for every member that would require e-mail brief					

14.   Estimated Labor Cost for Foreign Country Clearances

An Individual Force Protection Plan takes about 90 minutes to complete. For a total population at NPS equal to 2,541 individuals, the NPS security manager stated he processes about 12 such requirements a week. Therefore, a ratio of .246 annual requirements per individual was estimated and applied to the total federal workforce for a total of 801,232 requirements costing $51.51 million, or $64 per unit when the appropriate civilians to military proportions were calculated.

Table 36.   Estimated Costs of Obtaining a Country Clearance

Employee	Percentage	Time	Travel	P/M Cost	Total Cost
Military	0.4275744	90	342586.12	0.6237	$19,230,386.81
1395048					
GS Civilians	0.5724256	90	458645.4	0.7821	$32,283,590.76
1867654					
3262702					
OPM Products	801,232				
Member Cost					$51,513,977.58
Cost per Unit					$64.29

C.   SUMMARY

The above cost analyses used data gathered from security clearance holders and missions supporting the security clearance process. While the research findings may be limited to one DoD organization (the Naval Postgraduate School), the potential for estimating the total cost of personnel security clearances is definitely demonstrated. The major contribution is the inclusion of "unknown cost" in the estimated total cost of the security clearance process.   Identifying "known costs" is relatively easy, but this represents only a fraction of the estimated total cost of personnel security clearances. Unknown costs are hidden because they are not budgeted explicitly within the Personnel Security Clearance mission. This research demonstrates that it is important to be aware of these costs so that process managers can continually attempt to reduce them.   The next chapter will discuss recommendations for reducing these costs so resources budgeted for the supported activities can be used for the mission — rather than to maintain cleared personnel.

V.   RECOMMENDATIONS

The Personnel Security Clearance Program has been marginally successful at reducing the time it takes to complete the processes for an investigation. However, there are opportunities to improve the processes that could reduce costs without increasing the risks of compromising information critical to national security.

A.   DOCUMENT MOVEMENT

The recently implemented Common Access Card (CAC) capability enables DoD personnel to electronically sign documents. This capability should be used to reduce the labor cost of moving security clearance documents to and from the security manager. It is even possible that the security manager's duties could be significantly reduced by having the subject submit security clearance questionnaires directly to OPM. CAC technology is already used by other government programs to validate, identity, and electronically sign documents.

One example is the Air Force Personnel Center Virtual Military Personnel Flight Web page (program used by the Air Force for performing personnel actions). Using this program, a military member has access to privacy act data by a double verification system. The military member must have the CAC and a secret pin number.   A similar capability could be included in the e-QIP Web page (program used by OPM to receive completed questionnaires from the subject) to save employee time that could be spent on the primary mission. As estimated in this research using one specific DoD organization, the cost of completing ANACI/NACL and SSBI security clearance questionnaires could be reduced by $28 million by simply eliminating the trip to the security manager to turn in signed documents. This small change could also save $3.5 million for SSBI-PR and PPR reinvestigations.

B.   JPAS INQUIRY AND SOFTWARE USE

Checking in with the security manager on arrival at a new duty station, or to complete questionnaires, should be eliminated.   There are less labor-intensive methods to

gather the information required to validate current security clearance status within JPAS. Additionally, prompting individuals to complete forms required to complete a security manager investigation could also be unnecessary.

1. If a copy of the military member's orders is routed to the security manager, the requirement to physically report to the security manager's office could be avoided. A review of Air Force Form 899 (Request and Authorization for Permanent Change of Station) disclosed the following: Block 1 prompts for a name, Block 2 prompts for the member's Social Security Number, and Block 4 prompts for the current security clearance level and the date and nomenclature of the last investigation. This information is sufficient to validate current clearance status and determine if further action is required.

2. Savings could also be achieved if e-QIP linkages with systems like JPAS are improved to allow self-management of security clearance requests and updating form requirements. A perfect example is again the Air Force Personnel Center Virtual Military Personnel Flight, which permits on-line processing of Air Force personnel actions. Products that are due for an update are identified when the Air Force member logs into the program. A link to the specific form is provided, and, once the military member completes the form, it is updated within their permanent records. Even if e-QIP is not suited for such improvement, coordinating with the Air Force Personnel Center to use their existing capability should be considered.

Another alternative is to upgrade capabilities of JPAS to e-mail a message to clearance holders when a periodic review is needed. The e-mail should include a link where the person could be asked if they still need a security clearance and finally a link to e-QIP to complete the required questionnaire. The system should also provide security managers with a report of individuals within their commands who have failed to act on the e-mail generated requests. These possibilities provide important cost-saving opportunities.

3. If security clearance offices are given access to systems like the Air Force Personnel Center Virtual Military Personnel Flight system, security forms could be linked and managed. Such improvements could reduce the amount of manpower currently applied to the security management process.

In addition, existing systems could help investigators reduce their required time to locate people, coordinate activities, ease management and increase security. As a result, the security managers and the investigative processes themselves would become more effective, and the time waiting for a clearance would be reduced. Recall that the DSS previously completed 324 background investigations per work year while the current OPM system only completes approximately 226 background investigations per work year. The proposed changes would help reduce this disparity.

C.   FINGERPRINTS

Fingerprints should be collected only once from each service member under normal circumstances. As of 2007, fingerprints are required for reinvestigations. This step may be unnecessary. While there may be some scenarios where this requirement would make sense, it certainly does not seem effective when there is no question that the same person provided prints 5 or 10 years earlier. If prints were not collected during reinvestigations, the $3.41 million in security clearance holder time could be saved. In addition, time and supplies would be saved in fingerprint-gathering activities.

D.   WAITING FOR A CLEARANCE

Waiting for a clearance is the single most significant cost identified by this research. The Intelligence Reform and Terrorism Protection Act, which mandated a timetable for the security clearance process of 90 days to investigate and 30 days to adjudicate, has significantly improved the average waiting period. However, as a by-product, the mandate might make the process subject to gamesmanship to achieve the metric but not necessarily the goal that it was meant to achieve. To mitigate this potential negative result, controls could be established to motivate efforts to achieve the goal rather than simply meet a number. The requirement could be broken down by type of security clearance or by case complexity.

For example, the easier to accomplish ANACI/NACL investigations outnumber the more lengthy SSBI and SSBI-PR investigations by nearly 4 to 1. This difference may encourage investigators and adjudicators to meet the standard by completing more of the less time consuming investigations when SSBI investigations and adjudications are not meeting the standard. If this is currently happening, the recent success in decreasing the average waiting period could be followed by increases in time spent on SSBI and SSBI-PR investigations.

One USIS investigator interviewed in conjunction with this research claimed that nearly 30 percent of his time was spent filling time gaps and other imperfect information in questionnaires. To mitigate this deficiency, electronic audits and internal validation routines could be incorporated into e-QIP to identify and correct these problems before the service member is allowed to submit the completed form. Such self-checking routines are already built into the Defense Travel System (DTS). In DTS, many electronic audits are available to the system administrators, and they can choose which ones to activate. In addition to catching errors or omissions before the form is submitted, the audit could identify to the security managers (or OPM) which cases are likely to result in significant delays, so they can take appropriate actions to minimize their adverse impact.

The USIS investigator interviewed also stated that a contract investigator's data-gathering ability was inferior to that of a U.S. government investigator due to laws in some states. An evaluation team within the investigative communities could identify the scenarios where these conditions apply, and recommend automated solutions. The Personnel Investigations Processing Systems (PIPS) could then be programmed to distribute the leads to the appropriate investigators. If PIPS cannot be improved to provide an automated solution, human resources could be used to accomplish the same task. Such improvements would decrease the time spent waiting for a clearance.

It is unclear from the information gathered for this research project why OPM charges the same amount for a SSBI as for a more difficult and time-consuming SSBI. It is assumed that the investigative contractors are also paid by type of investigation, without regard to difficulty. It might be productive to negotiate with investigative

contractors to determine if they would charge less for easy investigations, and more for harder and more resource-consuming investigations. Contract clauses could grant rewards for reduction in time, as long as quality standards generated by the investigative and adjudicative communities (by type and complexity of investigation) are met. Even if such changes would not generate savings on direct costs paid for the investigation, they could generate savings by reducing the time spent waiting for clearances. This is a critical improvement, because the time spent waiting for a clearance is the highest cost of a security clearance investigation, according to the data gathered for this research. Another benefit is that investigative contractors might be motivated to hire more effective investigators or invest in their own process improvement programs. PPRs are a very good example of where the government has been able to reduce the required resources for an investigation category. PPRs have an estimated total cost (including OPM fee, Known costs and Unknown cost) of $2,494 per investigation, which is much less that the SSBI-PR cost of $4,220. If a similar approach is applied to the SSBI (i.e., a phased –SSBI), not only would it reduce the OPM fee, but it would also reduce time spent waiting for a Top Secret Security Clearance. If the cost savings were proportional to those achieved by PPR over the SSBI-PR, phased-SSBIs could save or almost one half of the $20,919 cost per investigation using a SSBI.

E.   SECURE TRAVEL BRIEFS

Many clearance holders have access to secure workstations. In such cases they could receive classified briefs similar to the Non-Secure briefs available online. Not only would this be more convenient, it would decrease the time required for an individual to travel to and from a secure briefing location, and would save the security manager's time.

F.   CONCLUSION

Hopefully this research project will stimulate the awareness of the wide range of costs associated with the present personnel security system. Clearly, there are numerous areas for improvement and cost savings. Improvements to that system will be funded when justified by a cost-benefit analysis based on more accurate and comprehensive data.

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