HB

33

THE LEGISLATURE OF THE STATE OF ALASKA
TWELFTH LEGISLATURE

FISCAL NOTE

I. REQUEST
Bill/Resolution No. House Bill No. 33
Title "An Act... for a State Trooper Facility"
Requested by _____ Date _____

II. FISCAL DETAIL
Agency Affected Department of Public Safety
Program Category Affected Administration of Justice
BRU, Program, Or Subprogram(s) Affected AST / Support & Services
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

Added two Chemists in FY85 Operating budget but deleted by Gov.

EXPENDITURES (Thousands of Dollars)

	FY 83	FY 84	FY 85 (July 84)	FY 86	FY 87	FY 88
100 PERSONAL SERVICES			416.6	441.6	468.1	496.2
200 TRAVEL			10.0	10.6	11.2	11.9
300 CONTRACTUAL			30.0	31.8	33.7	35.7
400 COMMODITIES			28.3	30.0	31.8	33.7
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC.						
TOTAL			484.9	514.0 +6%	544.8 +6%	577.5

29.0 DC 9 U

FUNDING (Thousands of Dollars)

464.9 + 29.1 = 514.0

GENERAL FUND			484.9	514.0	544.8	577.5
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS

FULL TIME			9	9	9	9
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

This legislation provides funds for the construction of a 30,000 sq. ft. public safety facility in Anchorage to house an expanded Statewide Crime Laboratory, the Anchorage Metropolitan Drug Enforcement Unit and the local Alaska State Troopers and Fish & Wildlife Protection Detachments. The attached Schedule 1 details the Capital Costs and Schedule 2 details the operating Costs. The vast majority of the Operating Costs represents a shift in direction for the Crime Lab from being a limited service A.S.T. facility to becoming a full-service operation designed to meet the needs of all ~~local~~ law enforcement agencies in the state. Operating costs after FY'85 reflect an annual 6% inflation rate estimate.

Prime Sat = 17K #
Fed/Pvt = 13K #

IV. DATE January 17, 1983 PREPARED BY Francis C. Allan F.C.Allan
AGENCY Division of Alaska State Troopers
PHONE 269-5691

Original: Legislative Finance
cc: Budget and Management
Prime Sponsor (First Legislator Named)
33-001 (Rev. 12/81)

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y, State Capitol
Juneau, Alaska 99811
(907) 465-3991

January 24, 1983

MEMORANDUM

To: Representative Walt Furnace

From: Leonard Steinberg, Research Staff L.S.

Re: FBI Examination of Legal Evidence
Research Request 83-11

Steve Levi of your office requested the following information:

1) The number of Alaska criminal cases which made use of the FBI crime lab in Washington D.C.;

2) How many legal cases went to court with FBI assistance;

3) How often the FBI's time for analysis exceeded Alaska's 120 day limitation for court appearances; and

4) What specific evidence has been sent to the FBI for analysis.

Our attempts to answer these questions involved contacting: the Federal Bureau of Investigation in Anchorage and in Washington D.C.; the State of Alaska's Chief Prosecuter and the Anchorage District Attorney; the Alaska State Troopers; and the municipal police in Anchorage and Fairbanks.

Number of Alaska Criminal Cases Involving the FBI's Crime Lab

The table below lists the number of Alaska cases and the number of different examinations of Alaska evidence that were performed by the FBI's crime lab in federal fiscal years 1980, 1981, and 1982. (The federal fiscal year runs from October 1 to September 30; FY 80, for example began began October 1, 1979 and ended September 30, 1980.) This information was obtained from Manuel Marquez, of the Federal Bureau of Investigation in Washington D.C.

The number of examinations performed is many times larger than the number of cases because each case often includes many different items and each item may undergo numerous different examinations.

Year	Number of Cases	Number of Examinations
1980	181	10,744
1981	209	13,531
1982	236	19,510

Number of Legal Cases Which Went to Court With FBI Assistance

There are no records of the number of times the FBI's crime lab analysis has actually been used in court. Though FBI crime lab examiners frequently travel to Alaska to testify in criminal proceedings, only rough estimates of the number of visits are avialable.

According to Larry Nelson, the FBI's chief agent in Alaska, not a month goes by without one of the FBI's crime lab examiners traveling to Alaska to make a court appearance. Captain Smith, of the Anchorage Police Department, said he knew of at least 6 FBI crime lab examiners that visited Alaska during the last year.

The FBI in Washington D.C. may maintain records on number of visits examiners make to testify in Alaska courts, but the FBI declined to make that information available to us. The use of FBI examiners or laboratory analysis could be reconstructed by reviewing all the criminal files of the District Attorneys in Alaska, but doing so would require a substantial amount of time.

Excessive Time Required For FBI Analysis

Law enforcement authorities in Alaska are concerned that the FBI's crime lab will not analyze and return the evidence to Alaska in time to meet the requirement, unless waived by the defendent, that criminal trials take place within 120 days of an arrest.

There is little evidence of the FBI's laboratory analysis failing to arrive in time for a trial. The State Troopers have described one case (Alaska vs. Lewis, 1981) in which the trial court suppressed use of the FBI's lab report received the morning of the trial, but that case was complicated by other factors and the suppression was overturned on appeal.[1]

No other specific cases of laboratory analysis too late for use in court have been cited. However, Fairbanks Police Chief Matthew Kiernan estimated that perhaps in one percent of his cases he was unable to use the

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[1] Department of Public Safety. The Development of a Full Service Forensic Laboratory for Law Enforcement in Alaska. September 1982. Page 11.

FBI's laboratory analysis in court because of delays. Other Alaska law enforcement authorities indicated that, to their knowledge, evidence has always arrived in time, but not without the use of personal contacts between the law enforcement authorities in Alaska and FBI examiners in Washington D.C. Estimates of amount of time normally required for an FBI analysis ranged from two to six months.[2]

Specific Evidence Sent To The FBI For Analysis

It was not possible to obtain a list of the specific legal evidence which has been sent from Alaska to the FBI for analysis in the time available to complete this research request. All law enforcement authorities were contacted but regular records of what has been submitted for analysis have not been maintained.

The FBI crime lab in Washington D.C. may maintain records of what it has analyzed for Alaska, but this information was not made available to us. A list of the specific evidence sent to the FBI for analysis could be reconstructed by going through all the criminal files of the law enforcement authorities in Alaska, but doing so would require a substantial amount of time.

The FBI's crime lab conducts all known types of criminal analysis. Examples of Alaskan criminal evidence currently analyzed by the FBI include: questioned documents, body fluids, firearms, trace metals, voice prints, hair, fibers, and fingerprints.

Additional Information

Currently, all FBI service (analysis and expert witnesses) are available free of charge. The FBI crime lab s work is well respected and the examiners make excellent witnesses. However, many of Alaska's law enforcement officials spoke of the federal government's intention to cease providing lab services for state and local police.

The FBI, while supporting the development of regional criminal analysis laboratories, denies any intention of reducing services to state and local law enforcement authorities.

* * * * *

We hope this information is useful to you. Please let us know if we can be of any further assistance.

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[2] Captain Smith of the Anchorage Police Department estimated normal FBI turnaround time at two months while Major Korhonen of the Alaska State Troopers estimated normal turnaround times of five to six months.

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ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y, State Capitol
Juneau, Alaska 99811
(907) 465-3991

January 26, 1983

MEMORANDUM

To: Representative Walt Furnace

From: Leonard Steinberg, Research Staff

Re: Criminalistics Analysis--Additional Information On Costs
Research Request 83-11

Steve Levi of your office requested additional information on the costs of criminalistic analysis performed by both public and private institutions. Also included is an update on the FB crime lab's involvement in court proceedings in Alaska and the specific analytical techniques used by the FBI.

Criminalistics Analysis Costs--Findings

Many different rate structures are used to establish the prices of criminalistics analysis services. Most prices are based on hourly rates, though some labs charge a flat fee for each individual service. In general, labs are reluctant to charge flat fees because there is considerable variability in the amount of time required to analyze different pieces of evidence. Apparently some tests, such as toxicology, are very routine and their costs are affected by economies of scale. Other examinations, however, such as firearm and toolmark identification, vary greatly in the amount of time required for each examination.

Hourly rates vary from twenty-three to one hundred dollars per hour with the public and non-profit facilities providing the lowest hourly rates. Most private criminalistics analysis organizations provide only limited services, primarily for defense counsel's rebuttal of a prosecutor's evidence. In fact, there are very few private laboratories; most of the private sector activity in criminalistics is from individuals formerly associated with a criminalistics lab who are experts in interpreting the laboratory data. The private laboratories which do exist are small and their costs are high, in part, due to their low volume.

Five public, one private non-profit, and three private for-profit criminalistics laboratories were sampled for the cost of their services. The results are listed below by each organization.

Contra Costa County Sheriff's Crime Lab

Like most counties in California, the Contra Costa County Sheriff's Crime Lab provides criminalistics analysis for all law enforcement agencies, municipal, county, state and federal, located in that county for no charge. The lab ocassionally contracts to provide its services to public agencies outside the county, and charges only the additional costs it incurs in making these services available. In general, its extra costs are only labor; their labor rate has been estimated at $23 per hour.

According to Gerald Mitosinko, the lab's director (415 372-2466), the Contra Costa County Crime Lab has calculated the amount of time it has spent on various criminalistics procedures during the last several years. The average amounts of time required are listed below by different types of examinations. In parentheses is a rough approximation of the costs of these examinations, calculated on the basis of the time shown multiplied by the labor cost of $23 per hour.

Amphetamines	.7 hours ($16)	Heroin	1.36 hours ($31)
Cocaine	.5 hours ($12)	Marijuana	.39 hours ($9)
Explosives	4.83 hours ($111)	Document	2.84 hours ($65)
Shoe/Tire Prints	4.17 hours ($96)	Firearms ID	11.91 hours ($274)
Fiber & Hair	5.18 hours ($119)	Toolmarks ID	7.13 hours ($164)

Dallas County -- Southwestern Institute of Forensic Sciences

The Southwestern Institute of Forensic Sciences is a Dallas County agency. According to Director Irving Stone (214 638-9980), the Institute charges a fixed rate by the type of service performed. The rates have been set on the assumption that labor rates are approximately $50 per hour. In addition, the Institute charges a flat $200 fee for testimony and travel. The Institute's fee schedule and background information is being sent in the mail, but examples of their charges are listed below.

Documents Exam	$50	Fingerprint Exam	$50
Bullet Exam	$35	Typewriter Comparison	$50
Serial Number Restoration	$50	Search for Spermatazoa	$15

Tool Mark Comparison	$50	Search for Blood or Seminal Stains	$15
Hair & Fiber Analysis	$30	Analysis of ABO/RH From Dried Stains	$40

Connecticut State Police Forensic Sciences Laboratory

Dr. Henry Lee,is the Chief of the Forensic Sciences Laboratory in the state of Connecticut (203 238-6324). Dr. Lee explained that in addition to providing criminalistic analysis services for law enforcement authorities throughout Connecticut for no charge, his lab charges law enforcement authorities in surrounding states only for the cost of materials used in criminalistic analysis and for the time required for testimony.

Dr. Lee said that his lab has twenty-six employees and an annual budget of approximately $500,000.

Washington State Police Crime Lab

George Ishi is the Director of the Washington State Police Crime Lab (206 464-7073). According to Mr. Ishi, the Washington State Police Crime Lab does provide ciminalistics analysis services to other public agencies under contract. The lab charges $60 per hour plus any unusual expenses such as for special chemicals, special instruments, or testimony. Mr. Ishi is sending an analysis of the time spent by his lab on different types of criminalistic proceedures.

Kansas City, MO, Regional Criminalistics Laboratory

According to Gary Howell of the Regional Criminalistics Laboratory in Kansas City, MO (816 234-5000), public sector laboratory that charges $30 per hour to all public agencies within a surrounding five county region and $45 per hour to other public agencies outside that five county region. Howell was careful to say that it is impossible to predict how much time any particular examination will require.

Howell said that time spent by his staff testifying is billed at the same rate as laboratory time. Howell calculated that his lab spends about 20,000 hours examining evidence each year. Howell is sending additional information in the mail.

Northern Illinois Police Crime Lab

The Northern Illinois Police Crime Lab is a private non-profit membership agency organized to provide criminalistics services to municipal

police departments throughout Northern Illinois, an area with a population of approximately 500,000. The lab's Director, Andrew Principe (312 432-8160), explained that each member municipality pays an annual assessment based on its population as illustrated in the table below.

Population of City	Annual Fee
1000	$1500
3500	$3100
20,000	$11,500
50,000	$25,800
70,000	$29,800
100,000	$35,800

The Northern Illinois Police Crime Lab also provides criminalistic analysis for non-member public organizations at a cost of $75 per hour, with a one-hour minimum charge. In addition, when the lab's staff is required to testify, the charge for that service is $200 for the first hour and $50 per hour thereafter.

According to Mr. Principe, the lab's annual budget of about $300,000, is primarily from the annual membership fees. The lab employs a staff of ten and the lab has $500-600,000 worth of equipment.

Forensic Science Associates

Forensic Science Associates is a private for-profit criminalistics laboratory located in the San Francisco area that does not provide routine types of analysis; Forensic Science Associates does not do toxicology, blood alcohol analysis, or drug identification. Peter Barnett (415 653-3530) said that his firm's fee is $70 per hour and the amount of time he spends on any one procedure varies considerably. Most of this firm's work is for private defense counsel.

Criminalistic Laboratory

Criminalistic Laboratory is also a private for-profit small volume lab in the San Francisco area. According to the lab's Chuck Morton (415 451-0767), some of their work is performed for public agencies, but most of their work is also for private defense counsel. Criminalistic Laboratory charges $75-100 per hour depending on the analysis being conducted. In addition, Criminalistic Laboratory also has some

fixed fees for standard procedures, such as paternity testing ($70-80 per sample), blood grouping ($75 per sample), saliva analysis ($50 per sample) and others.

Western Laboratories

Western Laboratories, also in the San Francisco area, is primarily a private for-profit medical laboratory. However, Western Labs does perform toxicology, forensic alchohol, and autopsy service under contract to Alameda County. Dr. Paul Herman, head of the lab, said that fixed fees are charged for these services and is sending a fee schedule by mail. Dr. Herman warned, however, that Western's fees are expected to rise by about 20% in the near future.

FBI Crime Lab Update

According to Larry Nelson, the FBI's agent in charge in Alaska, in federal FY 82, FBI examiners made fifty-one trips to Alaska to testify in court. In forty-seven cases, testimony was actually given in court and four cases were resolved prior to the FBI examiner's scheduled court appearance.

The fifty-one trips made by FBI examiners to Alaska in FY 82 were to present testimony about the following analytical proceedures.

Type of Examination	Number of Examinations
Firearm and Toolmark Identification	17
Hair and Fiber Analysis	15
Serology and Blood Type Examinations	13
Neutron Activiation Tests	3
Paint Analysis	1
Metallurgy Analysis	1
Document Examination	1

of crime lab tests provide facts contributing to the exoneration of the innocent and the establishment of proof of the guilty. The modern lab requires highly trained scientists and technicians who use costly materials and sophisticated instrumentation in an expensive environment, for there can be no compromise in the quality of the work they perform.

A modern, full-services Crime Lab presents a wide array of expertise. Some of these are:

* Toxicology A Toxicologist detects and identifies the presence of drugs or poisons in body tissues, fluids and organs.

* Firearms and Tool Marks Examination The Examiner can, for example, match a spent bullet to the gun that fired it by examination of the microscopic markings on the bullet caused by the irregularities on the inner surface of the gun barrel, among other capabilities. As a Tool Marks Specialist, he can identify the tire iron or other implement found in the suspect's car as the one that pried open the window or door of the victim's home by comparing and matching the microscopic nicks on the blade of the tire iron to the impressions left in the wooden window sill.

* Forensic Serology The Forensic Serologist, through analyses of body fluids, semen, and saliva found at the crime scene, can limit the population group of the assailant to those within certain blood groups, thus eliminating persons with other blood groups and characteristics as suspects in a given crime.

* Questioned Documents Examination The Questioned Documents Examiner can ascertain the source or authenticity of a document through the many characteristics of an individual's handwriting, as well as through the variations in typewriter letters as a function of the use and wear to the machine's moving parts, and through the analyses of inks and different types of paper.

* Forensic Chemistry The Forensic Chemist tests and analyzes unknown substances. By testing substances thought to be illegal drugs, he can determine the type drug, its relative purity and the substances that may be mixed with the drug. He can also identify small amounts of accelerants from a suspected arson fire by testing charred and burned materials

found at the fire, as well as numerous other related tasks requiring chemical analysis.

* Trace Evidence Examination The Trace Evidence Examiner can narrow the origin of minute bits of evidence such as human hair and fibers, that are exchanged during a violent confrontation, to a group that includes (or excludes) the suspect. The brown head hair found on the shirt of the suspect can be shown to match the hair of the victim of the assault.

* Fingerprint Examination The Fingerprint Examiner can match fingerprints found on a gun or some other surface to those of the suspect based upon the matching of the characteristics of the fingerprint ridges that are unique to each individual. (The Automated Fingerprint Identification System, funded during the 1982 session of the legislature, and now being developed, will be placed within the Crime Laboratory.)

It is the use of carefully gathered evidence, analyzed by the latest scientific methodologies of the numerous forensic disciplines that builds both a strong case against the accused, while eliminating other persons as suspects.

Unfortunately, state and local law enforcement agencies in Alaska do not have a laboratory with such capabilities. In fact, Alaska is the only State without a statewide crime lab. The rudimentary laboratory in the Troopers building in Anchorage is limited by space, personnel and budget to only narcotics testing, fingerprint identification and crime photography. These very limited services are performed at no cost to all law enforcement agencies in Alaska.

Historically Alaska has depended upon the FBI lab to perform criminalistics tests and has done so to a greater degree than any other state. While this dependence upon the FBI has worked reasonably well in the past, the FBI has recently suffered budget cuts as part of the general decrease

Project Justification: Continued

100 Personal Services - Maintenance & Operations

Job Class Range	Maintenance Worker Range 54	Janitor Range 59
Annual Salary	$22,380	$16,776
One Month Overtime	- 0 -	- 0 -
Subtotal	22,380	16,776
Benefits	3,929	2,945
SBS	1,371	1,028
Health Insurance	2,400	2,400
TOTAL	$30,080	$23,149

Summary - Personal Services, Lab and Maintenance & Operations

	Lab	Maint & Ops	Total
Annual Salary	$ 235,044	$ 39,156	$ 274,200
One Month Overtime	26,160	- 0 -	26,160
Subtotal	$ 261,204	$ 39,156	$ 300,360
Benefits	45,861	6,874	52,735
SBS	14,903	2,399	17,302
Health & Ins.	20,160	4,800	24,960
TOTAL	$ 342,128	$ 53,229	$ 395,357

CONTINUATION FROM: 35b

CATEGORY Administration of Justice

AGENCY Department of Public Safety

PROGRAM Crime ID & Apprehension

Revised Date

FY 84

200 Travel

In-state & out-of-state travel to maintain $ 10,000 OPERATING COSTS

and develop professional expertise. $ 10,000

300 Contractual

Telephone	$18,400	
Electricity	13,000	
Other Utilities	5,000	
Building Repairs & Maint	7,000	
Subtotal		$ 43,400

400 Commodities

Heating Fuel	$31,800	
Miscellaneous	2,000	
Subtotal		$ 33,800

Total Annual Operating Costs $402,557

OPERATING COSTS

	FY 85	FY 86
Line 100	$395,357	$395,357
Other	+ 55,000	+ 07,200
Sub-total	$450,357	$402,557
Inflation	+ 27,021	+ 59,644
Total	$477,378	$542,201

IDENTIFICATION OF ALTERNATIVES CONSIDERED:

(1) Do not expand the crime lab and thus avoid becoming involved in evidence analysis on a statewide basis. This is unreasonable and unacceptable given our statutory responsibilities.

(2) Ship evidence to out-of-state laboratories (there is no in-state laboratory capable of performing the necessary tests). This is unacceptable for the following reasons:

CONTINUATION FROM: 35b

CATEGORY Administration of Justice

AGENCY Department of Public Safety

PROGRAM Crime ID & Apprehension

Revised Date 10/4/82

FY 84

01-1147 (7/82) - CONT

ANCHORAGE COMBINED FACILITY
CAPITAL COSTS

Schedule 1

1)	**Construction Costs**		
	Crime Lab - 17,000 sq. ft.	$3,366.0	
	A.S.T. & F.W.P. Posts - 11,000 sq. ft.	1,210.0	
	Metro - 2,000 sq. ft.	220.0	
	DOT/PF Overhead, Architect, Planning Contingency, etc.	1,472.2	
	Subtotal		$6,268.2
2)	**Equipment**		
	Crime Lab	859.0	
	A.S.T. & F.W.P. Posts	37.5	
	Subtotal		896.5
3)	**Commodities**		
	Crime Lab - Initial stock		71.0
4)	**Inflation** - Through construction start		864.3
	TOTAL	Rounded	$8,100.0

8.066.6

(We additional cost went into Const. originally)

Lab Space Only - Operational = 5750 ✓
Non operational = 5500 ✓
Future Expansion = 5500 ✓
16.750 - rounded to 17,000 ✓

Space Cost - FBI says forensic lab cost = 180% of Commercial Bldg Space -
Commercial Space - Anc - mid 82 = 110/ ✓

ANCHORAGE COMBINED FACILITY
FY'85 OPERATING COSTS

Schedule 2

100 Personnel Services

Serologist - Range 19		$38,124	
Trace Evidence Specialist - Range 19		38,124	
Fingerprint I.D. Specialist - Range 18		35,580	
Fingerprint I.D. Specialist - Range 18		35,580	
Firearms & Tool Marks Specialist - Range 19		38,124	
Forensic Chemist/Dep. Director - Range 21		44,508	
Administrative Ass't II - Range 14 & O.T.		29,133	
Maintenance Worker - Range 54		22,380	} Have been always been in the Capital budget
Janitor - Range 59		16,776	
	Subtotal		$298,329
Benefits for above		94,662	
	Subtotal		$392,991
Subtotal - Above at 106% to reflect inflation through FY'85			$416,570

Only state employees can draw this

200 Travel

In-state & out-of-state travel needed to attain and maintain professional expertise	10,000

300 Contractual Services

Telephone		$12,500	
Electricity		9,100	
Other Utilities		3,500	
Building Repairs & Maintenance		4,900	
	Subtotal		30,000

400 Commodities

Heating Fuel		$26,700	
Miscellaneous		1,600	
	Subtotal		28,300
	TOTAL		$484,870

Work Sheet No. 33

FY85

Slight increase here

Have had a large increase

Job Class Range	Serologist Range 19	Trace Evidence Specialist Range 19	Fingerprint ID Specialist Range 18	Fingerprint ID Specialist Range 18	Firearms & Tool Marks Specialist Range 19	Range 01	Administrative Ass't II Range 14	Maintenance Worker Range 54	Janitor Range 59	Total
Annual Salary	$38124	38,124	35,580	35,580	38,124	44,508	24,592	20,380	16,776	276,088
	-0-	-0-	-0-	-0-	-0-	-0-	2241	-0-	-0-	2241
Subtotal	38,124	38,124	35,580	35,580	38,124	44,508	22,133	20,380	16,776	278,339
Benefits	6,695	6,695	6,248	6,248	6,695	7,818	5,116	3,930	2,945	54,400
SBS	2,240	2,240	2,183	2,183	2,240	2,240	1,577	1,371	1,028	17,302
Health Insurance	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,400	2,400	24,960
TOTAL	49139	49139	46,891	46,891	49,939	57,446	38,706	30,081	23,149	374,991

@ 1069

416,570

100,000

300 Contractual

Telephone	$	12,500
Electricity		11,000
Other Utilities		3,500
Building Repairs & Maint		4,000
Subtotal		31,000

400 Commodities

Heating Fuel	$	20,000
Miscellaneous		1,200
Subtotal		

Total Annual Operating Costs

133,870

156,870

— TO TESTIFY —

Alaska State Legislature

House of Representatives

Committee on State Affairs

Pouch V
State Capitol
Juneau, Alaska 99811

WITNESS
SIGN-IN SHEET

HEARING DATE: 1-27-83

NAME (PRINTED)	ADDRESS	REPRESENTING	PHONE	MATTER
M. J. Messick	5700 Tudor Rd.	State Troopers	269-5350	HB-33
T D Vaden	5700 Tudor Rd	State Troopers	269-5645	HB-33
Rep Walt Furnace/	P.O. Box 1542	Self	465-3892	HB33
Norma Jumberg				

HSA FORM #002

— TO OBSERVE —

Alaska State Legislature

Pouch V
State Capitol
Juneau, Alaska 99811

House of Representatives

Committee on State Affairs

OBSERVER
SIGN-IN SHEET

HEARING DATE: 1-27-83

NAME (PRINTED)	ADDRESS	REPRESENTING	PHONE	MATTER
~~BOB SUNDBERG~~	~~450 WHITTIER~~	~~DPS~~	~~456-4323~~	~~CRIME LAB~~ HB 33
Leonard Steinberg	Pouch V - Juneau	House Rsch Agency	465 3991	
Barbara Lachel	Pouch V	Leg.	465-4694	

HSA FORM #003

THE LEGISLATURE OF THE STATE OF ALASKA
TWELFTH LEGISLATURE

FISCAL NOTE

I. REQUEST
Bill/Resolution No. House Bill No. 33
Title "An Act... for a State Trooper Facility"
Requested by _____ Date _____

II. FISCAL DETAIL
Agency Affected Department of Public Safety
Program Category Affected Administration of Justice
BRU, Program, Or Subprogram(s) Affected AST / Support & Services
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 83	FY 84	FY 85 (July 84)	FY 86	FY 87	FY 88
100 PERSONAL SERVICES			416.6	441.6	468.1	496.2
200 TRAVEL			10.0	10.6	11.2	11.9
300 CONTRACTUAL			30.0	31.8	33.7	35.7
400 COMMODITIES			28.3	30.0	31.8	33.7
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS,CLAIMS,ETC.						
TOTAL			484.9	514.0	544.8	577.5

FUNDING (Thousands of Dollars)

GENERAL FUND			484.9	514.0	544.8	577.5
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS

FULL TIME			9	9	9	9
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

This legislation provides funds for the construction of a 30,000 sq. ft. public safety facility in Anchorage to house an expanded Statewide Crime Laboratory, the Anchorage Metropolitan Drug Enforcement Unit and the local Alaska State Troopers and Fish & Wildlife Protection Detachments. The attached Schedule 1 details the Capital Costs and Schedule 2 details the operating Costs. The vast majority of the Operating Costs represents a shift in direction for the Crime Lab from being a limited service A.S.T. facility to becoming a full-service operation designed to meet the needs of all ~~local~~ law enforcement agencies in the state. Operating costs after FY'85 reflect an annual 6% inflation rate estimate.

IV. DATE January 17, 1983 PREPARED BY Francis C. Allan F.C.Allan
AGENCY Division of Alaska State Troopers
PHONE 269-5691

Original: Legislative Finance
cc: Budget and Management
- Prime Sponsor (First Legislator Named)

33-001 (Rev. 12/81)

Name Bill No. 33

Job Class Range	Serologist Range 19	Trace Evidence Specialist Range 19	Fingerprint ID Specialist Range 19	Fingerprint ID Specialist Range 19	Firearms & Tool Marks Specialist Range 19	Director Range 81	Administrative Ass't II Range 14	Maintenance Worker Range 54	Janitor Range 59	Total
Annual Salary	$38,124	38,124	35,580	35,580	38,124	44,508	26,892	22,380	16,776	276088
	-0-	-0-	-0-	-0-	-0-	-0-	2,241	-0-	-0-	2241
Subtotal	38,124	38,124	35,580	35,580	38,124	44,508	29,133	22,380	16,776	278329
Benefits	6,695	6,695	6,248	6,248	6,695	7,818	5,116	3,930	2,945	55100
SBS	2,240	2,240	2,183	2,183	2,240	2,240	1,577	1,371	1,028	17,302
Health Insurance	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,400	2,400	24,960
TOTAL	49939	49939	46,891	45,891	49,939	57456	38,706	30,081	23,149	399,971

200 Travel
In-State Out-of-State

300 Contractual

Telephone	$ 10500
Electricity	1100
Other Utilities	
Building Repairs & Maint	3500
Subtotal	14600

400 Commodities

Heating Fuel	$ 2500
Miscellaneous	1500
Subtotal	

Total Annual Operating Costs

Household & Drug Investigation

Slight increase here

@1069

416570

10000

14600

2500

1545 70

16479

ANCHORAGE COMBINED FACILITY
FY'85 OPERATING COSTS

Schedule 2

100 Personnel Services

Serologist - Range 19		$38,124	
Trace Evidence Specialist - Range 19		38,124	
Fingerprint I.D. Specialist - Range 18		35,580	
Fingerprint I.D. Specialist - Range 18		35,580	
Firearms & Tool Marks Specialist - Range 19		38,124	
Forensic Chemist/Dep. Director - Range 21		44,508	
Administrative Ass't II - Range 14 & O.T.		29,133	
Maintenance Worker - Range 54		22,380	These have always been on the Capital budget
Janitor - Range 59		16,776	Only state employees can drive state vehicles
	Subtotal		$298,329
Benefits for above		94,662	
	Subtotal		$392,991
Subtotal - Above at 106% to reflect inflation through FY'85			$416,570

200 Travel

In-state & out-of-state travel needed to attain and maintain professional expertise	10,000

300 Contractual Services

Telephone		$12,500	
Electricity		9,100	
Other Utilities		3,500	
Building Repairs & Maintenance		4,900	
	Subtotal		30,000

400 Commodities

Heating Fuel		$26,700	
Miscellaneous		1,600	
	Subtotal		28,300
	TOTAL		$484,870

ANCHORAGE COMBINED FACILITY
CAPITAL COSTS

Schedule 1

1)	**Construction Costs**		
	Crime Lab - 17,000 sq. ft.	$3,366.0	
	A.S.T. & F.W.P. Posts - 11,000 sq. ft.	1,210.0	
	Metro - 2,000 sq. ft.	220.0	
	DOT/PF Overhead, Architect, Planning Contingency, etc.	1,472.2	
	Subtotal		$5,268.2
2)	**Equipment**		
	Crime Lab	859.0	
	A.S.T. & F.W.P. Posts	37.5	
	Subtotal		896.5
3)	**Commodities**		
	Crime Lab - Initial stock		71.0
4)	**Inflation** - Through construction start		864.3
	TOTAL	Rounded	$8,100.0
			8,066.6

(the additional amt went into PF overhead

Lab Space Only - Operational = 5750 ☐
Non-operational = 5500 ☐
Future Expansion = 5500 ☐
16,750 - rounded to 17,000 ☐

Cost - FBI says forensic lab cost = 180% of Commercial Bldg Space -
Commercial Space - Anc - mid 82 = $110/☐

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y, State Capitol
Juneau, Alaska 99811
(907) 465-3991

January 26, 1983

MEMORANDUM

To: Representative Walt Furnace

From: Leonard Steinberg, Resear

Re: Criminalistics Analysis--Additional Information On Costs
Research Request 83-11

Steve Levi of your office requested additional information on the costs of criminalistic analysis performed by both public and private institutions. Also included is an update on the FBI crime lab's involvement in court proceedings in Alaska and the specific analytical techniques used by the FBI.

Criminalistics Analysis Costs--Findings

Many different rate structures are used to establish the prices of criminalistics analysis services. Most prices are based on hourly rates, though some labs charge a flat fee for each individual service. In general, labs are reluctant to charge flat fees because there is considerable variability in the amount of time required to analyze different pieces of evidence. Apparently some tests, such as toxicology, are very routine and their costs are affected by economies of scale. Other examinations, however, such as firearm and toolmark identification, vary greatly in the amount of time required for each examination.

Hourly rates vary from twenty-three to one hundred dollars per hour with the public and non-profit facilities providing the lowest hourly rates. Most private criminalistics analysis organizations provide only limited services, primarily for defense counsel's rebuttal of a prosecutor's evidence. In fact, there are very few private laboratories; most of the private sector activity in criminalistics is from individuals formerly associated with a criminalistics lab who are experts in interpreting the laboratory data. The private laboratories which do exist are small and their costs are high, in part, due to their low volume.

Five public, one private non-profit, and three private for-profit criminalistics laboratories were sampled for the cost of their services. The results are listed below by each organization.

Contra Costa County Sheriff's Crime Lab

Like most counties in California, the Contra Costa County Sheriff's Crime Lab provides criminalistics analysis for all law enforcement agencies, municipal, county, state and federal, located in that county for no charge. The lab ocassionally contracts to provide its services to public agencies outside the county, and charges only the additional costs it incurs in making these services available. In general, its extra costs are only labor; their labor rate has been estimated at $23 per hour.

According to Gerald Mitosinko, the lab's director (415 372-2466), the Contra Costa County Crime Lab has calculated the amount of time it has spent on various criminalistics procedures during the last several years. The average amounts of time required are listed below by different types of examinations. In parentheses is a rough approximation of the costs of these examinations, calculated on the basis of the time shown multiplied by the labor cost of $23 per hour.

Amphetamines	.7 hours ($16)	Heroin	1.36 hours ($31)
Cocaine	.5 hours ($12)	Marijuana	.39 hours ($9)
Explosives	4.83 hours ($111)	Document	2.84 hours ($65)
Shoe/Tire Prints	4.17 hours ($96)	Firearms ID	11.91 hours ($274)
Fiber & Hair	5.18 hours ($119)	Toolmarks ID	7.13 hours ($164)

Dallas County -- Southwestern Institute of Forensic Sciences

The Southwestern Institute of Forensic Sciences is a Dallas County agency. According to Director Irving Stone (214 638-9980), the Institute charges a fixed rate by the type of service performed. The rates have been set on the assumption that labor rates are approximately $50 per hour. In addition, the Institute charges a flat $200 fee for testimony and travel. The Institute's fee schedule and background information is being sent in the mail, but examples of their charges are listed below.

Documents Exam	$50	Fingerprint Exam	$50
Bullet Exam	$35	Typewriter Comparison	$50
Serial Number Restoration	$50	Search for Spermatazoa	$15

Tool Mark Comparison	$50	Search for Blood or Seminal Stains	$15
Hair & Fiber Analysis	$30	Analysis of ABO/RH From Dried Stains	$40

Connecticut State Police Forensic Sciences Laboratory

Dr. Henry Lee,is the Chief of the Forensic Sciences Laboratory in the state of Connecticut (203 238-6324). Dr. Lee explained that in addition to providing criminalistic analysis services for law enforcement authorities throughout Connecticut for no charge, his lab charges law enforcement authorities in surrounding states only for the cost of materials used in criminalistic analysis and for the time required for testimony.

Dr. Lee said that his lab has twenty-six employees and an annual budget of approximately $500,000.

Washington State Police Crime Lab

George Ishi is the Director of the Washington State Police Crime Lab (206 464-7073). According to Mr. Ishi, the Washington State Police Crime Lab does provide ciminalistics analysis services to other public agencies under contract. The lab charges $60 per hour plus any unusual expenses such as for special chemicals, special instruments, or testimony. Mr. Ishi is sending an analysis of the time spent by his lab on different types of criminalistic proceedures.

Kansas City, MO, Regional Criminalistics Laboratory

According to Gary Howell of the Regional Criminalistics Laboratory in Kansas City, MO (816 234-5000), public sector laboratory that charges $30 per hour to all public agencies within a surrounding five county region and $45 per hour to other public agencies outside that five county region. Howell was careful to say that it is impossible to predict how much time any particular examination will require.

Howell said that time spent by his staff testifying is billed at the same rate as laboratory time. Howell calculated that his lab spends about 20,000 hours examining evidence each year. Howell is sending additional information in the mail.

Northern Illinois Police Crime Lab

The Northern Illinois Police Crime Lab is a private non-profit membership agency organized to provide criminalistics services to municipal

police departments throughout Northern Illinois, an area with a population of approximately 500,000. The lab's Director, Andrew Principe (312 432-8160), explained that each member municipality pays an annual assessment based on its population as illustrated in the table below.

Population of City	Annual Fee
1000	$1500
3500	$3100
20,000	$11,500
50,000	$25,800
70,000	$29,800
100,000	$35,800

The Northern Illinois Police Crime Lab also provides criminalistic analysis for non-member public organizations at a cost of $75 per hour, with a one-hour minimum charge. In addition, when the lab's staff is required to testify, the charge for that service is $200 for the first hour and $50 per hour thereafter.

According to Mr. Principe, the lab's annual budget of about $300,000, is primarily from the annual membership fees. The lab employs a staff of ten and the lab has $500-600,000 worth of equipment.

Forensic Science Associates

Forensic Science Associates is a private for-profit criminalistics laboratory located in the San Francisco area that does not provide routine types of analysis; Forensic Science Associates does not do toxicology, blood alchohol analysis, or drug identification. Peter Barnett (415 653-3530) said that his firm's fee is $7[illegible] per hour and the amount of time he spends on any one procedure varies considerably. Most of this firm's work is for private defense counsel.

Criminalistic Laboratory

Criminalistic Laboratory is also a private for-profit small volume lab in the San Francisco area. According to the lab's Chuck Morton (415 451-0767), some of their work is performed for public agencies, but most of their work is also for private defense counsel. Criminalistic Laboratory charges $75-100 per hour depending on the analysis being conducted. In addition, Criminalistic Laboratory also has some

fixed fees for standard procedures, such as paternity testing ($70-80 per sample), blood grouping ($75 per sample), saliva analysis ($50 per sample) and others.

Western Laboratories

Western Laboratories, also in the San Francisco area, is primarily a private for-profit medical laboratory. However, Western Labs does perform toxicology, forensic alchohol, and autopsy service under contract to Alameda County. Dr. Paul Herman, head of the lab, said that fixed fees are charged for these services and is sending a fee schedule by mail. Dr. Herman warned, however, that Western's fees are expected to rise by about 20% in the near future.

FBI Crime Lab Update

According to Larry Nelson, the FBI's agent in charge in Alaska, in federal FY 82, FBI examiners made fifty-one trips to Alaska to testify in court. In forty-seven cases, testimony was actually given in court and four cases were resolved prior to the FBI examiner's scheduled court appearance.

The fifty-one trips made by FBI examiners to Alaska in FY 82 were to present testimony about the following analytical proceedures.

Type of Examination	Number of Examinations
Firearm and Toolmark Identification	17
Hair and Fiber Analysis	15
Serology and Blood Type Examinations	13
Neutron Activiation Tests	3
Paint Analysis	1
Metallurgy Analysis	1
Document Examination	1

THE LEGISLATURE OF THE STATE OF ALASKA
THIRTEENTH LEGISLATURE

FISCAL NOTE

[XX] Expenditure Type
[ ] Revenue Type

I. REQUEST
Bill/Resolution No. House Bill No. 33
Title "An Act...for a State Trooper Facility"
Requested by House Senate Affairs Date 01/25/83

II. FISCAL DETAIL
Agency Affected Department of Public Safety
Program Category Affected Administration of Justice
BRU, Program, Or Subprogram(s) Affected AST Support & Services/Laboratory
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS,CLAIMS,ETC.						
TOTAL		-0-	484.9	514.0		

FUNDING (Thousands of Dollars)

GENERAL FUND		-0-	484.9	514.0		
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS

FULL TIME						
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

This legislation provides funds for the construction of a 30,000 sq. ft. public safety facility in Anchorage to house an expanded Statewide Crime Laboratory, the Anchorage Metropolitan Drug Enforcement Unit, and the local Alaska State Troopers and Fish & Wildlife Protection Detachments. This represents a shift in direction for the Crime Lab from being a limited service AST facility to becoming a full-service operation designed to meet the needs of all local law enforcement agencies in the State.

IV. DATE January 25, 1983 PREPARED BY Frank Allan Phone 269-5691
DIVISION AST Initials
DEPARTMENT OF PUBLIC SAFETY Initials 1/24/83

Original: Legislative Finance
cc: Budget and Management
Prime Sponsor (First Legislator Named)

33-001 (Rev. 12/82)

DETAIL OF FISCAL DATA

		FY 84	FY 85	FY 86
100	Personal Services		416.6	441.6
200	Travel		10.0	10.6
300	Contractual		30.0	31.8
400	Commodities		28.3	30.0
500	Equipment			
600	Land & Structures			
700	Grants, Claims, etc.			
	TOTAL	-0-	484.9	514.0

POSITIONS

PFT		9	9

ANCHORAGE COMBINED FACILITY
CAPITAL COSTS

Schedule 1

1)	**Construction Costs**		
	Crime Lab - 17,000 sq. ft.	$3,366.0	
	A.S.T. & F.W.P. Posts - 11,000 sq. ft.	1,210.0	
	Metro - 2,000 sq. ft.	220.0	
	DOT/PF Overhead, Architect, Planning Contingency, etc.	1,472.2	
	Subtotal		$6,268.2
2)	**Equipment**		
	Crime Lab	859.0	
	A.S.T. & F.W.P. Posts	37.5	
	Subtotal		896.5
3)	**Commodities**		
	Crime Lab - Initial stock		71.0
4)	**Inflation** - Through construction start		864.3
	TOTAL		$8,100.0

ANCHORAGE COMBINED FACILITY
FY'85 OPERATING COSTS

Schedule 2

100 Personnel Services			
Serologist - Range 19		$38,124	
Trace Evidence Specialist - Range 19		38,124	
Fingerprint I.D. Specialist - Range 18		35,580	
Fingerprint I.D. Specialist - Range 18		35,580	
Firearms & Tool Marks Specialist - Range 19		38,124	
Forensic Chemist/Dep. Director - Range 21		44,508	
Administrative Ass't II - Range 14 & O.T.		29,133	
Maintenance Worker - Range 54		22,380	
Janitor - Range 59		16,776	
	Subtotal		$298,329
Benefits for above		94,662	
	Subtotal		$392,991
Subtotal - Above at 106% to reflect inflation through FY'85			$416,570
200 Travel			
In-state & out-of-state travel needed to attain and maintain professional expertise			10,000
300 Contractual Services			
Telephone		$12,500	
Electricity		9,100	
Other Utilities		3,500	
Building Repairs & Maintenance		4,900	
	Subtotal		30,000
400 Commodities			
Heating Fuel		$26,700	
Miscellaneous		1,600	
	Subtotal		28,300
	TOTAL		$484,870

R. STEVE LEVI, LEGISLATIVE AIDE
ON. WALT FURNACE, STATE HOUSE
JNEAU

EAR MR. LEVI:

HANK YOU FOR YOUR INQUIRY REGARDING THE BREAKOUT OF THE $8.1 MILLION FOR A
RIME LAB. THIS TOTAL INCLUDES $6.043 MILLION FOR THE LAB WITH AN ADDITIONAL
2.057 MILLION FOR THE RELOCATION OF THE ANCHORAGE METRO DRUG UNIT,(WHICH IS
HE COMBINED DRUG INTERDICTION TEAM OF STATE TROOPERS AND ANCHORAGE POLICE
EPT.), THE FISH AND WILDLIFE PROTECTION DIVISION, AND THE ANCHORAGE POST OF
HE STATE TROOPERS INTO NEW QUARTERS WITH ADEQUATE SPACE. THESE THREE AGENCIES
ND THE LAB WOULD BE COMBINED INTO A SINGLE FACILITY LOCATED ON STATE LAND
DJACENT TO THE EXISTING TROOPERS HEADQUARTERS.

E RELOCATION OF THESE THREE AGENCIES AND THE NEW LAB IS PART OF THE CAPITAL
MPROVEMENT REQUEST UNDER DEVELOPMENT FOR THE PAST FOUR YEARS AS A COMBINED
ROJECT. THE LAB PLAN AND THE EXECUTIVE SUMMARY, OF COURSE, RELATE ONLY TO THE
EW LAB. PAGES 104-110 DETAIL THE EXPECTED LAB-RELATED COSTS.

LEASE CALL ME IF ANY ADDITIONAL INFORMATION IS NEEDED.

INCERELY YOURS,
.J. MESSICK / DD/SP11 \

MEMORANDUM State of Alaska

TO: Colonel T. R. Anderson
Director
Alaska State Troopers

DATE: April 14, 1982

FILE NO:

TELEPHONE NO:

FROM: Lieutenant John Lucking
Acting Commander
Criminal Investigation Bureau

SUBJECT: FBI Lab Services

As a matter of information to you, be advised of the following recent events this past week.

In our homicide case I82-3203 (double murder) evidence was sent to the FBI Lab for analysis. This included some hair and fiber tests. We received a phone call from the lab in which they discussed the necessity of our requested examinations.

In our homicide case I81-50020 (double murder) evidence was sent to the FBI Lab for analysis. This also included hairs and fibers for testing. Again we received a phone call from the lab in which they discussed the necessity of our requested examinations.

I believe these events demonstrate the pressure the FBI Lab is under in attempting to accomodate all requests.

To: Representative Mitch Abood, Chairman
House Committee on State Affairs

Through: Representative Walt Furnace

From: Steven C. Levi, Staff

Date: 1/20/83

RE: HB 33

At the present time, law enforcement agencies across Alaska are facing a crisis. First, there is the 120 day rule. Upon the arrest of a suspect, the police have 120 days to build and develop a case. If they cannot build the case and take it court, within that time frame, the suspect must be freed. This is in line with the constitutional guarantee of a speedy trial.

Second, since many of the cases involved have evidence which is sent to the FBI, prosecution depends not only on the quality of evidence gathered, but on the timeliness of the FBI.

Third, over the years the FBI has expanded its crime lab facilites and services and, as a result, more and more law enforcement agencies have taken advantage of the FBI's services. At this point the FBI is so overload that the agency cannot assure Alaskan law enforcement agenices that the FBI can consistently provide an analysis of evidence within the 120 day time frame.

Additionally, the FBI is also facing a manpower crunch. As the volume of evidence increases and the number of manhours necessary to be in court grows, FBI specialists are spending more and more time on-the-road and in court and less and less time in the laboratory. Unfortunately, many of the matters upon which the FBI testifies are those which could reasonably be handled by local laboratories.

Alaska is thus faced with a dilemma. Alaska may 1) continue to depend on the FBI and expect to lose cases because of the time factor, 2) pay a private firm or firms to analyze evident or 3) the State can build, maintain and run a crime lab that will handle many of the basic functions of evidence analysis.

The crime lab dilemma is made even more complicated by the fact that whichever way the State turns it is going to be expensive It is simply a matter of spending money or losing cases. The FBI provides its analysis for free; it cannot be guaranteed that cases will not fall out of the judicial process simply because the evidence could not get back to Alaska on time.

The proposed crime lab facility, as expressed by Representative Furnace in HB 33, will contain facilities for serology, fingerprinting, trace evidence, forensic sciences, firearms and tool marks as well as basic

chemical analysis of unknown substances. The facility will also house an expanded evidence storage facility. The crime lab will not handle such specialized services as ballistics and paint samples.

Additionally, staff notes the following.

1) Since many law enforcement agenices across the state use the FBI lab for a variety of functions, an actual assessment of the evidence sent to the lab on an annual basis is not available. There is no central clearinghouse for evidence. The Alaska State Troopers, the Anchorage Police Department and the Fairbanks City Police all use the FBI but do not inform one another of that fact.

2) Estimated costs of private labs are speculative. Many labs do not want to examine sample piecemeal. Long term contracts with private labs are both reasonable and prudent. But they will also be expensive. And, since Alaska may not have many of the necessary facilities instate, there is a great likelyhood that evidence will have to be sent out of state for analysis. There has been comment that this would force Alaskan dollars to be spent out-of-state on services Alaska should be developing instate.

THE DEVELOPMENT OF A FORENSIC LABORATORY IN ALASKA

EXECUTIVE SUMMARY

Within the last decade or so, a series of Supreme Court decisions relative to search and seizure, interrogation, and confessions have had the effect of limiting the scope of permissible investigative activities by law enforcement agencies nationwide. This situation has resulted in the increased attention to the use of physical evidence in criminal investigations, and the subsequent development of state and regional crime laboratories throughout the country to analyze this evidence.

The application of the natural and physical sciences to items of evidence found at a crime scene is an increasing part of modern investigations and courtroom trials, and often becomes a crucial part of judicial proceedings. The increased reliance upon analysis of physical evidence also confers upon crime laboratories the responsibility for the highest degree of professionalism in their work.

The role of the forensic laboratory is to assist both the investigator and the prosecutor in their efforts to reconstruct and explain the crime, the crime scene and information about the possible offender. The results

* This paper summarizes the more extensive report issued by the Department of Public Safety in September 1982 entitled "The Development of a Full Service Forensic Laboratory for Law Enforcement in Alaska."

of crime lab tests provide facts contributing to the exoneration of the innocent and the establishment of proof of the guilty. The modern lab requires highly trained scientists and technicians who use costly materials and sophisticated instrumentation in an expensive environment, for there can be no compromise in the quality of the work they perform.

A modern, full-services Crime Lab presents a wide array of expertise. Some of these are:

* Toxicology A Toxicologist detects and identifies the presence of drugs or poisons in body tissues, fluids and organs.

* Firearms and Tool Marks Examination The Examiner can, for example, match a spent bullet to the gun that fired it by examination of the microscopic markings on the bullet caused by the irregularities on the inner surface of the gun barrel, among other capabilities. As a Tool Marks Specialist, he can identify the tire iron or other implement found in the suspect's car as the one that pried open the window or door of the victim's home by comparing and matching the microscopic nicks on the blade of the tire iron to the impressions left in the wooden window sill.

* Forensic Serology The Forensic Serologist, through analyses of body fluids, semen, and saliva found at the crime scene, can limit the population group of the assailant to those within certain blood groups, thus eliminating persons with other blood groups and characteristics as suspects in a given crime.

* Questioned Documents Examination The Questioned Documents Examiner can ascertain the source or authenticity of a document through the many characteristics of an individual's handwriting, as well as through the variations in typewriter letters as a function of the use and wear to the machine's moving parts, and through the analyses of inks and different types of paper.

* Forensic Chemistry The Forensic Chemist tests and analyzes unknown substances. By testing substances thought to be illegal drugs, he can determine the type drug, its relative purity and the substances that may be mixed with the drug. He can also identify small amounts of accelerants from a suspected arson fire by testing charred and burned materials

found at the fire, as well as numerous other related tasks requiring chemical analysis.

* Trace Evidence Examination The Trace Evidence Examiner can narrow the origin of minute bits of evidence such as human hair and fibers, that are exchanged during a violent confrontation, to a group that includes (or excludes) the suspect. The brown head hair found on the shirt of the suspect can be shown to match the hair of the victim of the assault.

* Fingerprint Examination The Fingerprint Examiner can match fingerprints found on a gun or some other surface to those of the suspect based upon the matching of the characteristics of the fingerprint ridges that are unique to each individual. (The Automated Fingerprint Identification System, funded during the 1982 session of the legislature, and now being developed, will be placed within the Crime Laboratory.)

It is the use of carefully gathered evidence, analyzed by the latest scientific methodologies of the numerous forensic disciplines that builds both a strong case against the accused, while eliminating other persons as suspects.

Unfortunately, state and local law enforcement agencies in Alaska do not have a laboratory with such capabilities. In fact, Alaska is the only State without a statewide crime lab. The rudimentary laboratory in the Troopers building in Anchorage is limited by space, personnel and budget to only narcotics testing, fingerprint identification and crime photography. These very limited services are performed at no cost to all law enforcement agencies in Alaska.

Historically Alaska has depended upon the FBI lab to perform criminalistics tests and has done so to a greater degree than any other state. While this dependence upon the FBI has worked reasonably well in the past, the FBI has recently suffered budget cuts as part of the general decrease

in federal government services and the widespread economic malaise throughout the Nation. As a result, some test results may not be received for three to six months. Since the Speedy Trial Rule in Alaska requires trial within 120 days of the arrest, test results may not be available by the time of trial, nor can additional investigation occur as a result of the outcome of the tests. Complete investigation and prosecution is therefore adversely affected.

However, the FBI's continuing role of providing crime laboratory services may be changing. A 1980 report by the General Accounting Office charges that the Bureau's policy of providing free criminalistics services has acted to inhibit the growth of regional and state wide crime laboratories. The effect of this report creates doubt that Alaska, and the other states, can rely upon FBI lab testing to the extent they have in the past. Decreased availability of FBI laboratory services has already begun with a fee now being charged for certain services and a much closer screening of requests. Most recently the FBI questioned the need for tests in a case that involved a double Homicide. Any further curtailment of service will be even more serious since Alaska is both increasing its population and experiencing a general crime increase while crime is generally decreasing nationwide.

While Alaska has, and continues to have some of its forensic tests performed by private laboratories elsewhere, this is not a good alternative for several reasons. Alaskan law enforcement agencies have no control over the scheduling, priorities of the methodologies and techniques used by external facilities, nor is there any control over the caliber of personnel

performing the tests. Additionally, such tests are usually expensive, since a profit is being made. Finally, the state has to pay a fee for all tests performed plus the travel and expenses of the technicians from the "lower 48" states who testify during trial.

That crime is increasing in Alaska appears obvious to the public. A few statistics show the extent of increase of crime:

* Forcible rape increased from 51 cases per 100,000 population in 1978 to 88 cases per 100,000 population in 1982;

* Robbery increased from 87 cases per 100,000 population in 1978 to 110 cases per 100,000 population in 1982.

* Total violent crime increased from 399 cases per 100,000 population in 1978 to 556 cases per 100,000 population in 1982.

Public attitudes as measured by recent public opinion surveys seem to reflect the growing crime statistics. Survey conclusions were that most people in Alaska believe crime is increasing faster than the population. The public further believes a basic cause of crime in Alaska is the failure of the justice system to punish criminals. A statewide forensics lab would aid the justice system in better investigation and more effective prosecution.

Perhaps the most compelling reason for a full services crime lab is the high evidentiary value of the crime scene evidence that has been analyzed and tested, for the test results provide irrefutable information about the suspect to either link him to a crime, or to eliminate him from any further investigation. Laboratory test results can thus provide a high degree of proof of guilt.

Passage of legislation aimed at increasing interdiction of illicit drugs throws a further burden upon the existing, very limited laboratory at the Troopers headquarters. The addition of five more drug investigators funded by the legislature for 1982 has caused an increasing backlog of drug related tests to perform, while the number of forensic chemists remains the same.

The continuing lack of a crime lab to service Alaska's law enforcement efforts is affecting the decisions and perceptions of some police officers. Knowing there is no facility to perform certain tests and analyses in a timely and affordable manner, some officers place a decreasing value upon physical evidence found at the crime scene and therefore tend to rely upon other means to develop their case. Therefore their case will lack the high evidentiary value that often results from forensic examinations. Any future, long term lack of a statewide lab, in the face of reduced services from the FBI, will probably result in the emergence of several small efforts by local enforcement agencies to provide their own testing facilities. These will likely be of limited scope, overlapping, and fragmented efforts of unknown value. The smaller police departments, unable to afford their own limited facilities, and unable to pay the high costs charged by private labs elsewhere will simply do without forensic tests.

If the above reasons argue forcefully for the development of a statewide crime lab to provide services for all law enforcement agencies in Alaska, the next questions are how big a facility is needed, what services need to be provided and what are the costs involved?

The term full-services lab as proposed here means the hiring of scientific personnel to the extent that the level of need in Alaska justifies a given discipline. For example, a forensic chemist could be hired immediately on the basis that the present drug-testing workload, and that of the immediate future justifies another full time forensic chemist. By contrast, a Questioned Documents Examiner would not be hired now because the workload is not sufficient to support a full-time Examiner. Each of the other forensic disciplines would be similarly evaluated. Those forensic services of an infrequent nature, or that require sophisticated instrumentation that cannot be justified in Alaska would be referred by Alaska's lab to another facility in the "Lower 48 states." To avoid the problems associated with the use of other labs, these external resource agencies would be carefully screened, evaluated, and their proficiency periodically tested, to ensure that personnel, procedures and equipment utilized are the best possible. Sufficient workload exists now, and in the in the future, for the hiring of the following forensic scientists and support personnel:

1. An additional Forensic Chemist
2. Serologist
3. Trace Evidence Technician
4. Firearms and Tool Marks Examiner
5. Administrative Assistant
6. Laboratory Director

In short, the proposed Crime Lab would hire its scientific and support personnel when the existing and forecasted workload makes such action

cost-effective while contracting with other forensic facilities to perform the balance of the work.

The lab would honor all requests by law enforcement agencies, by either performing the work in house or through contract elsewhere. This central facility would be managed by the State Troopers, as the statewide law enforcement agency, for the benefit of the entire law enforcement community in the state. Tests and related services would continue to be provided by the lab at no cost to the requesting agencies.

The proposed lab would be constructed adjacent to the Troopers Headquarters in Anchorage, on state-owned land. Substantial assistance has been obtained from the FBI Forensic Research Laboratory in Quantico, Virginia, during an intensive on-site visit to obtain their recommendations for construction requirements, space needs for scientific personnel and instrumentation, and the factors that should be used in calculating overall construction costs. (These are presented in detail in the main lab report).

Using data recommended by the FBI to provide a Crime Lab with the above professional staff, plus the staff of the existing facility of the Troopers, necessary instrumentation and the numerous support requirements, plus some space for expansion in the years ahead will require a structure of about 17,000 square feet. FBI data indicates that cost per square foot is about 180% of the cost of commercial construction ($110/sq ft, according to the Department of Transportation and Public Facilities) due to the unique plumbing, heating, ventilation and construction aspects required by a forensic laboratory. Construction would total about $3.366 million, with

another $1.1 million, representing 30% of construction cost required by the State for building State buildings. Scientific instruments, furnishing and commodities will total another $.930 million, for a total of $5.396 million. A 12% inflation factor for construction in 1983 and 1984 brings the grand total to $6.043 million.*

* The lab constitutes about 75% of the total cost of the FY'84 Public Safety Anchorage Combined Facility Capital Improvement Project request that has been under development through the normal budgeting process over the last four years, totaling $8.1 million and 30,000 square feet.

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF PUBLIC SAFETY

DIVISION OF STATE TROOPERS

P.O. BOX 6188 ANNEX
ANCHORAGE, ALASKA 99502
PHONE:

January 18, 1983

Ms. Carol Horos, Legislative Aide
c/o The Hon. Mitch Abood, Chairman
State Affairs Committee
State House
Pouch B
Juneau, AK

Dear Ms. Horos:

Steve Levi, of Rep. Walt Furnace's office asked me to forward reference materials concerning the Crime Lab appropriations bill (HR-33). I have enclosed herewith:

(1) Eight Additional copies of the detailed lab report.

(2) Eight copies of the Executive Summary of the lab report.

(3) Eight copies of the letter from our Criminal Investigations Bureau to the Director of the State Troopers relative to the FBI lab questioning our need for certain forensic examinations in two cases of double homicide, (see p. 10 of the detailed report)

(4) One copy - all I have left - of the General Accounting Office report which recommends decreased forensic lab services by the FBI and certain other federal agencies. Pertinent areas have been highlighted for easy reference. I think it is significant that the report continually refers to state and regional crime labs in several contexts. Clearly the assumption is that these labs already exist. Alaska, perhaps alone among the states, does not yet have such a lab.

Steve earlier asked for some cost effectiveness data as relates to the proposed new Crime Lab. Developing cost effectiveness is relatively easy to do when comparing two known quantities such as the cost of the state contracting with private enterprise to produce license plates versus to the cost of production by the State Corrections System. In this case, the pertinent cost factors — level of production, personnel, equipment etc. is all known and quantifiable. Thus the cost of the present system can be compared to the proposed one to a rather high level of accuracy.

L13LH

Unfortunately since Alaska has no full services crime lab, we cannot realistically compare the cost of the state performing forensic services to the cost of the FBI and other existing labs performing these same services, even if these were viable alternatives. We cannot, for example, quote the level of forensic services (and therefore the cost), required by Alaska's law enforcement agencies because they do not have such services available. To be sure, serious crime result in evidence being shipped to the FBI lab. But for many cases involving "less serious" crimes, forensic analyses are not performed because police departments realize they would place an intolerable burden upon the FBI, which already questions examinations needed in serious cases. (See item three above). Other reasons forensic examinations are not sought is the expense involved by private labs; the long time required to receive test results (including the FBI); lack of quality control in terms of procedures, personnel and equipment employed, and so on.

Even if we could in some way determine the cost of what full utilization of forensic services would be, any comparison with an alternative such as private labs, the FBI Lab, etc. would not be meaningful since they don't represent a viable alternative to a full services statewide lab, which of course is part of our problem, for the above noted reasons.

Although qualifiable cost effectiveness figures are admittedly difficult to ascertain, the development of a full services crime lab for Alaska has many easily identified positive aspects as follows:

A. Forensic Tests will be completed in a timely manner - Quicker test results means better investigation of the crime, particularly those crimes in which further investigation hinges upon the outcome of forensic testing. More timely test results also means more time for the prosecutor to prepare his case.

B. Increased Use of Forensic Examinations - With the availability of a statewide lab in Alaska, police officers will become better trained in evidence recognition, collection and preservation and will therefore submit more evidence for examination, thereby building a better case.

C. Earlier and More Efficient Elimination of the Innocent as Suspects - With the benefit of the capabilities of a forensic lab in Alaska, the innocent can be more quickly eliminated as a criminal suspect, thereby enhancing the effectiveness of the justice system.

D. Fewer Judicial Delays - With timely receipt of the results of forensic analyses, the state will not have to request continuances from the Court because of non receipt of lab tests, thereby reducing delays in trial as well as enhancing calendaring by the Courts.

E. Establish the Basis for a Medical Examiner Program in the future - Much of the criminal justice system considers a medical examiner preferable to the existing coronor system, particularly in the smaller communities to assure that an unattended death is in fact a natural death and not a cleverly contrived homicide. A Medical Examiner system could be co-located wi[illegible] the Crime Lab with benefits being derived by both [illegible]ncies, in terms of professional consultation, common use of equipment, facilities, etc.

F. High Evidentiary Values of Forensic Tests - The results of forensic tests provide irrefutable proof about an item of evidence thereby enabling more effective follow-up investigation by the police officer. In addition, lab tests have a very high evidentiary value, thereby better enabling the prosecutor to meet the high burden of proof required in Alaska. Both of these facts should result in additional numbers of successful prosecutions.

G. Signify Legislative Intent to Reduce Crime - Funding a Crime Lab, managed by the Troopers, for use by all city and borough police departments, military police agencies and federal agencies could only be viewed as continuing support by the lesislature to assist in the efforts against crime and to make existing law enforcement efforts more effective.

H. Better Control of Existing Forensic Tests - In the absence of a statewide forensic laboratory, Alaska's law enforcement agencies will continue to experience problems in their dealings with "Outside" laboratories involving lack of "quality control" over the expertise of technicians performing tests, type of equipment used, the reluctance of non-forensic scientists to testify in Court, procedures employed, and the setting of priorities and maintaining the "chain of custody" of items of evidence analyzed. Alaska has experienced too many instances of "Outside" experts who have been discredited in court, thereby casting a cloud over forensic test results in general. Additionally there is no control over a lab suddenly deciding to go out of business as happened to the Troopers in 1977, leaving them with a lot of evidence to analyze and no lab to do it.

I. Prudent Move in the face of Decreasing Federal Services - Developing a Crime Lab in Alaska now may be a very prudent move considering cut-backs in federal services, including the FBI Lab which have already begun. (See letter from Invest. Lucking to Dir. Anderson, State Troopers of April 14, 1982). Reduction of FBI lab services will adversely affect Alaska more than any other state, since Alaska has more requests per capita, than any other state, and even in gross numbers, more than many other states (See Map, p. 10-A of report). Coupled with increasing population and the present existing level of inadequacies in forensic testing, Alaska may not have a viable option if they do not construct a lab of their own.

J. Support by the Criminal Justice System - The realization of the need and advantages of a full-services crime lab extends beyond the law enforcement component to include prosecutors and judges as well. All realize the justice system would be improved with a crime lab.

K. Probable Consequences of Failure to Develop a Crime Laboratory - Beyond the inadequacies that presently exist in obtaining forensic services, the failure to develop a lab in Alaska will probably result in the emergence of several small rather restricted efforts by municipal police departments to provide their own testing facilities. They will probably be of limited scope, overlapping, fragmented efforts, costly, with test results from several facilities conducted by individuals of varying competency.

L. Lab Would Expand as the Need Arises - the concept of a "Full Services" Lab as more completely set forth on p. 21 envisions the lab accepting all evidence for whatever tests are needed. However those tests of an infrequent nature that do not justify an in-house scientist would be performed by an external agency of proven reputation. The entire laboratory concept involves adding an additional scientific discipline, or another scientist to an existing discipline when the level of requests for tests justifies such addition, rather than gearing up for a full services lab immediately only to find that the work load does not justify the entire lab staff and that certain equipment on hand is being used only infrequently. We think this guiding principal is reasonable, addresses the problem of not being able to do a realistic cost effectiveness analysis and assures an overall cost-effective approach to the proposed new lab.

M. Cost Estimates of Alaska's Lab have been developed in conjunction with the FBI - The cost figures contained in the last of the main report and the Executive Summary, are realistic, as accurate as possible, and come from the best of all possible sources -- the FBI lab itself. Three days were spent with the Director of the FBI's Forensic Research and Training Unit, touring their new facility in Quantico, Virginia. The Director personally designed the building, developed cost criteria, determined space and equipment needs, and ultimately supervised the on-site construction. His guidance and recommendations concerning space, utilities and design are reflected in the main report and his cost factors were used in determining the cost of the proposed lab in Alaska. Inflation, the higher cost of Alaskan construction and the 30% of building cost for the Dept. of Transportation and Public Facilities as their fee, are all expenses in addition to the basic construction cost, as more completely explained in the last chapter of the main report.

Carol, I'm sorry this has been such a long letter, but the subject is both important and has many aspects to be presented. Please call me at 269-5508 if additional information or justification is required.

Thanks for all your help in this matter.

Sincerely yours,

M. James Messick
Special Assistant
to the Commissioner

cc: Mr. Steve Levi, Legislative Aide
c/o Hon. Walt Furnace

Mr. Robert R. Sundberg, Commissioner
Dept. of Public Safety

Col. Michael Kolivosky, Director
Alaska State Troopers

Enclosures

Project Justification: Continued

100 Personal Services - Maintenance & Operations

Job Class Range	Maintenance Worker Range 54	Janitor Range 59
Annual Salary	$22,380	$16,776
One Month Overtime	- 0 -	- 0 -
Subtotal	22,380	16,776
Benefits	3,929	2,945
SBS	1,371	1,028
Health Insurance	2,400	2,400
TOTAL	$30,080	$23,149

Summary - Personal Services, Lab and Maintenance & Operations

	Lab	Maint & Ops	Total
Annual Salary	$ 235,044	$ 39,156	$ 274,200
One Month Overtime	26,160	- 0 -	26,160
Subtotal	$ 261,204	$ 39,156	$ 300,360
Benefits	45,861	6,874	52,735
SBS	14,903	2,399	17,302
Health & Ins.	20,160	4,800	24,960
TOTAL	$ 342,128	$ 53,229	$ 395,357

CONTINUATION FROM: 35b

CATEGORY Administration of Justice

AGENCY Department of Public Safety

PROGRAM Crime ID & Apprehension

Revised Date

FY 84

200 Travel

In-state & out-of-state travel to maintain

$ 10,000

OPERATING COSTS

and develop professional expertise.		$ 10,000			
			FY 85		FY 86
300 Contractual					
			$395,357	Line 100	$395,357
Telephone	$18,400		+ 55,000	Other	+ 87,200
Electricity	13,000		$450,357	Sub-total	$482,557
Other Utilities	5,000		+ 27,021	Inflation	+ 59,644
Building Repairs & Maint	7,000		$477,378	Total	$542,201
Subtotal		$ 43,400			
400 Commodities					
Heating Fuel	$31,800				
Miscellaneous	2,000				
Subtotal		$ 33,800			
Total Annual Operating Costs		$482,557			

IDENTIFICATION OF ALTERNATIVES CONSIDERED:

(1) Do not expand the crime lab and thus avoid becoming involved in evidence analysis on a statewide basis. This is unreasonable and unacceptable given our statutory responsibilities.

(2) Ship evidence to out-of-state laboratories (there is no in-state laboratory capable of performing the necessary tests). This is unacceptable for the following reasons:

CONTINUATION
FROM: 35b

CATEGORY Administration of Justice

AGENCY Department of Public Safety

PROGRAM Crime ID & Apprehension

Revised Date 10/4/82

FY 84

THE DEVELOPMENT of a FULL SERVICE FORENSIC LABORATORY for LAW ENFORCEMENT IN ALASKA

By

The Department of Public Safety

September 1982

William R. Nix, Commissioner

Thomas R. Anderson, Director
Division of State Troopers

"Criminalistics is an occupation that has all of the responsibility of medicine, the intricacy of the law, and the universality of science. Inasmuch as it carries higher penalties for error than other professions, it is not a matter to take lightly, nor to trust to luck..."

Paul L. Kirk, Ph.D.
1902-1970

ALASKA FORENSIC LABORATORY PLAN

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FOREWORD

The decision to develop a plan for the establishment of a full service crime laboratory for use by all law enforcement agencies in Alaska followed the realization that Alaska is experiencing a substantial increase in the need for such a facility so that law enforcement and the criminal justice system can continue functioning in a professional manner.

The project began with extensive travel throughout the state to obtain the views and opinions of the law enforcement community and the criminal justice system generally concerning the present inadequacies of the laboratory and what services they would like to see a forensic's laboratory in Alaska perform. Other travel to Seattle, Sacramento and Santa Clara County, California provided an insight into laboratories that now provide a wide range of services. A later visit to the FBI s Forensic Training and Research facility at Quantico provided information about the unique needs of a crime laboratory that must be reflected in architectural design and later facility construction. The same trip provided a visit to the Automated Fingerprint Identification System of Montgomery and Prince Georges Counties in Maryland.

The extensive narrative needed to reflect user views and explain such a facility required that this plan be divided into different sections, beginning initially with why a full-service crime laboratory is needed, and some background about the existing, but very limited laboratory. Following is an explanation of what a full services crime laboratory is and can do. These capabilites are then related to Alaska in terms of the recommended improvements in services and facilities over the next several years. These recommendations are single spaced and sequentially numbered for easier reference.

The first draft was reviewed by laboratory personnel. Their comments were then incorporated into the draft that was sent to the many different justice system agencies throughout Alaska. Their comments were then incorporated into this final version.

Persons assisting in this laboratory plan are far too numerous to list individually. However, personnel in the Crime Laboratory devoted considerable time and effort and deserve individual recognition. They are Chris Beheim, Susanne Feller, Hank Chambers, Robert LaPoint, Arnie Lind, John Sauve, Kathy Kohn, Jim Gordon, Dave Beagel, Nadia Schalk, Myrtle Homesky, and Mira Franco.

Numerous law enforcement agencies throughout the state assisted, including the police departments in Anchorage, Fairbanks, Juneau, Ketchikan, Sitka, Petersburg, North Pole, Bethel, Palmer, Soldotna, Kenai, Homer, Seward, and Seldovia.

State Troopers personnel from the Detachments at Anchorage, Bethel, Juneau, Fairbanks, Palmer, and Soldotna, plus the Criminal Investigation Bureau, the White Collar Crime Unit and personnel in the existing Crime Laboratory in Anchorage participated and offered ideas and suggestions. The office of the Director of Fish and Wildlife Protection likewise forwarded ideas and reviewed aspects of interest in their field, as did the Anchorage office of the State Fire Marshal. Crime statistics were obtained from the office of Criminal Justice Assistance in the Department of Law, Juneau. Several prosecutors offered comments as did several judges from the Alaska Court System.

A literature search and listing of references was obtained from the National Criminal Justice Reference Service, Rockville, Illinois. Other data and information was forwarded by Larry Howard of the Georgia Crime Laboratory in Atlanta; Dr. Andrew Principe of the Northern Illinois Crime Laboratory in Highland Park; David Stafford, President of the American Society of Laboratory Directors, at the University of Tennesee in Memphis; Edward Whittaker, Dade County Florida, Crime Laboratory; George Taft, Director of the Texas Department of Public Safety Crime Laboratory in Austin; Lt. George K. Matsuda, Oregon State Police Crime Laboratory in Portland; and Lowell Bradford, a California based consulting forensic scientist.

Finally, particular thanks to Colonel T. R. Anderson, Director of the State Troopers and Commissioner William R. Nix for their interest in improving forensic capabilities in Alaska and continuing support during the development of this plan.

The assistance of each is gratefully acknowledged.

M. James Messick
Assistant to the Commissioner
July 1982

INTRODUCTION

Within the last decade or so, a series of Supreme Court decisions relative to search and seizure, interrogation and confessions have had the effect of limiting the scope of permissible investigative activities by law enforcement agencies. This situation, in turn, has resulted in the increased attention to the use of physical evidence in criminal investigations, and the subsequent development of crime laboratories to analyze this evidence throughout the nation. The application of the technologies and techniques of the natural and physical sciences to items of evidence found at a crime scene is an increasing part of modern investigations and courtroom trials. The expectation that these sciences are devoid of prejudice makes the results of crime laboratory tests and analyses an often crucial part of judicial proceedings. It also confers upon crime laboratories the responsibility for the highest degree of professionalism in their work.

The role of the crime laboratory is to assist both the investigator, and the prosecutor in their efforts to reconstruct and explain the crime, the crime scene and to establish possible linkages among a number of different, but related aspects of the crime. The success of the crime laboratory working with the investigators provides facts contributing to the exoneration of the innocent, and the establishment of proof of the guilty.

The 1970's witnessed the development of a significant number of crime laboratories in the United States. Many were developed with federal assistance through the Law Enforcement Assistance Administration. Attempts were also made to provide standards within the criminalistics field, both with regard to the proficiency of laboratories and the expertise of their personnel. Professional organizations were organized, assisted and encouraged by the FBI which up to that time had handled the majority of evidence testing and analyses in their forensic crime laboratory in Washington, D.C.

Alaska, however, did not develop a statewide forensics laboratory, preferring to utilize private enterprise and the FBI laboratory for the level of services needed at that time.

By the early 1980's however, LEAA was all but disbanded, and the federal government had embarked on an era of cost cutting and retrenchment in scope of services. A recent General Accounting Office report indicated that federal assistance, while obviously beneficial to investigative efforts, was in fact fostering greater dependence upon federal laboratories, and in some cases, actually inhibiting the development of state and local laboratories. During the last two years the number of requests to the FBI laboratory has kept increasing at the same time that budget cuts were being absorbed. A general economic malaise developed throughout the country, forcing cutbacks by the states and their political subdivisions and subsequently increasing dependence upon the FBI laboratory, which in turn has increased the response time for test results requested by law enforcement agencies throughout the country.

During the latter 1970's Alaska experienced an economic boom perhaps unequaled in its history, which after a short pause following completion of the oil pipeline, carried over into the 1980's. This prosperity in conjunction with oil revenues and the promise of continued growth in the years ahead through resource development all act as a powerful impetus for additional population growth which continues today. Many new residents are following the lure of high paying, but often temporary jobs associated with the construction industry. Drug use and violent crime is now increasing at the same time that crime is showing a decrease in the rest of the country according to the FBI.

Any extensive, in-depth discussion of a forensic's laboratory leads to the subject of forensic pathology, perhaps better known as a Medical Examiner system, since the two are often closely related.

Alaska presently does not have a Medical Examiner system, but rather a Coroner-Public Administrator system. There is considerable interest particularly in the smaller communities with limited local expertise in pathology, to improve the death investigation system by instituting a state medical examiner program. There is, moreover, interest in a Medical Examiner system not only within law enforcement, but from certain prosecutors and the judges as well.

There are several significant advantages to such a system. Perhaps most important is the professional expertise of a medical examiner who has been specifically trained in forensic pathology. Such a person can better assess whether a death is indeed a suicide, a natural death or a cleverly contrived homicide.

In addition to more professional death investigations, significant advantages can develop with a medical examiner and a crime laboratory sharing the same facility, including the mutual use of certain equipment, clerical and other support personnel, vehicles, and even facilities for the different tests needed by each. Increased professionalism would occur also. The integration of these two functfunctions within a single facility would produce substantial reinforcement for both disciplines, through the cross fertilization of ideas, methodologies, problem solving, consultation, and research concepts.

Although the medical examiner system is beyond the scope of this paper it is strongly urged that such a system be evaluated for Alaska. A later section dealing with the new facility required for an expanded laboratory recommends co-locating both functions within the same building.

The criminal justice system, and particularly law enforcement agencies and prosecutors in Alaska now seem to be at a juncture. They can continue without benefit of a statewide forensics laboratory,

thus maintaining the status quo in the face of increasing incidence of crime, or crime in Alaska can be vigorously addressed by scientists and technicians analyzing evidence with modern methods of technology, complementing the efforts of investigators and prosecutors.

This report examines the needs of law enforcement throughout Alaska and recommends the immediate deployment of resources toward a full-services crime laboratory for use by all law enforcement agencies in Alaska.

I. ALASKA'S NEED FOR A CRIME LABORATORY

What is a crime lab and why does Alaska need one? Although definitions will vary, a crime laboratory may be very basically defined as a scientific laboratory in which the natural sciences are used to test and analyze the various items of physical evidence associated with a crime.

One category of personnel in a crime laboratory are criminalists who are specialists within one or more specific disciplines. There may be chemists, toxicologists, serologists, trace evidence analysts, and numerous others. In addition, a crime laboratory may have several technical positions such as firearms identification and tool marks specialists, fingerprint examiners, photographers, explosive ordnance disposal experts, polygraph operators, questioned document examiners and others.

All are highly trained and educated, require frequent specialized training to keep abreast of changes within their fields and often use costly materials and sophisticated instrumentation in an expensive environment. There can be no compromise about the quality of the work they perform for the outcome of their tests may well determine the innocence or guilt of the accused.

Their work is often fascinating and can produce a wealth of information. A complete analysis of a white powder can establish not only whether a controlled substance is present, but its purity, if it is mixed with other drugs, or other substances. This can help establish whether or not it is possibly of the same lot as the drugs found at the home of a dealer. Analysis of a suspected stain can establish initially if it is blood, and if so if it is human or animal. Further blood grouping and enzyme analysis of the blood can eliminate certain individuals as suspects and establish probabilities of other persons as suspects. The examination of bullet holes in a pane of glass can establish from which side a bullet was fired, and the sequence and side if several shots were fired. Glass

comparisons can connect a suspect to a scene by the recovery of small chips found on the suspect and matching them to glass at the scene. Optical and physical properties along with refractive indices can yield additional data. Small fragments of glass fused to the filament of a vehicle's headlight can establish if the light was on or not when the hit and run accident occurred. Identification of latent fingerprints can establish a suspect, and so on.

The following paragraphs describe the reasons why such a facility is needed in Alaska.

A. Limitations of the Existing Lab

Beyond establishing drug identification and fingerprint comparisons which comprise almost the entire workload of the existing Troopers laboratory, Alaska has no crime laboratory with broad capabilities of the type described above. The existing "crime lab" is located in crowded quarters in the basement of the troopers headquarters building in Anchorage. Lack of additional personnel and physical limitations prevent its expansion.

Its professional personnel - chemists, fingerprint examiners and a photographer - are busy full time with the existing case load. With perhaps the exception of one other state, Alaska is the only state to not yet have a full-service crime laboratory. Some states including Alabama, Ohio, Illinois, Michigan, New Jersey, Florida, Virginia, Washington, California and others have developed a comprehensive statewide system of regional or satellite laboratories. Most states have had crime laboratories for some time. As long as nine years ago there were only four states, Alaska being one, that did not have a crime lab.[1]

[1]Fox, Richard & Carl L. Cunningham, "Crime Scene Search & Physical Evidence Handbook," October 1973.

B. Overview of the Crime Problem in Alaska

The following pages contain several charts that give an overview of crime in Alaska.

For data collecting purposes, the FBI has categorized crimes as Part I, (often called Index Crimes), and Part II crimes. The former includes the major crimes of murder, rape, robbery, aggravated assault, burglary, larceny, theft, arson and motor vehicle theft. The latter are the less serious, but more numerous crimes including vandalism, gambling, liquor law violations and many others.

Data about crime are submitted by 23 local police departments in Alaska and the State Troopers to the Department of Law which compiles the data for state purposes and then forwards the data to the FBI for national crime data information published each August, entitled Crime in the United States. A similar publication entitled Crime in Alaska is published annually by the Department of Law.[2] The data shown on the following charts has been modified from the 1981 Crime in Alaska, and for sake of brevity pertain only to Part I crimes, since they are the most serious, often the most violent, and can be assumed to involve evidence that can be analyzed in a forensics laboratory.

[2]Office of Law Enforcement Assistance.

Chart 1

Statewide

Number of Part I Crimes

1978-1981

	1978 ACTUAL OFFENSES	1979 ACTUAL OFFENSES	1980* ACTUAL OFFENSES	1981 ACTUAL OFFENSES
Violent Crimes				
Murder	50	55	35	58
Forcible Rape	216	275	228	355
Robbery	365	432	359	458
Aggravated Assault	1,046	1,059	1,145	1,372
Total Violent Crime	1,677	1,821	1,767	2,243
Property Crime				
Burglary	5,238	5,440	5,378	5,103
Larceny/Theft	14,179	14,501	14,356	15,237
Motor Veh Theft	2,496	2,230	2,172	2,344
Total Property Crime	21,913	22,171	21,906	22,684
TOTAL PART I CRIME	23,590	23,992	23,673	24,927

Chart 2

Anchorage Police Department

Number of Part I Crimes

1978-1981

	1978 ACTUAL OFFENSES	1979 ACTUAL OFFENSES	1980 ACTUAL OFFENSES	1981 ACTUAL OFFENSES
Violent Crime				
Murder	16	17	15	18
Forcible Rape	91	132	117	173
Robbery	218	343	296	380
Aggravated Assault	203	217	308	353
Total Violent Crime	528	709	736	924
Property Crime				
Burglary	2,049	2,478	2,611	2,797
Larceny/Theft	6,702	7,621	7,322	8,826
Motor Veh Theft	964	1,041	1,055	1,186
Total Property Crime	9,715	11,140	10,988	12,809
TOTAL PART I CRIME	10,243	11,849	11,724	13,733

*1980 offenses appear to have decreased as the result of a change in data collection and reporting.

Chart 3
Fairbanks Police Department
Number of Part I Crimes
1978-1981

	1978 ACTUAL OFFENSES	1979 ACTUAL OFFENSES	1980 ACTUAL OFFENSES	1981 ACTUAL OFFENSES
Violent Crime				
Murder	5	6	0	5
Forcible Rape	14	20	5	43
Robbery	41	28	20	32
Aggravated Assault	79	59	87	109
Total Violent Crime	139	113	112	189
Property Crime				
Burglary	334	332	384	422
Larceny/Theft	1,495	1,554	1,621	1,711
Motor Veh Theft	284	227	273	276
Total Property Crime	2,113	2,113	2,278	2,409
TOTAL PART I CRIME	2,252	2,226	2,390	2,598

With the exception of apparent decreases in 1980, the trend for Part I crimes, statewide, and for the cities of Anchorage and Fairbanks, is unmistakenly upward.

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Chart 4
Statewide Crime Trend Analysis
per 100,000 population
1978-1982

Projected	1978 Crime Rates	1979 Crime Rates	1980 Crime Rates	1981 Crime Rates	1982 Crime Rates
Violent Crime					
Criminal Homicide	12.0	13.0	9.0	14.0	12.5
Forcible Rape	51.0	66.0	57.0	85.0	88.0
Robbery	87.0	104.0	90.0	109.0	110.5
Aggravated Assault	249.0	255.0	286.0	327.0	345.5
Total Violent Crime	399.0	438.0	442.0	535.0	556.5
Property Crime					
Burglary	1,247.0	1,307.0	1,344.0	1,218.0	1,266.5
Larceny/Theft	3,376.0	3,486.0	3,589.0	3,637.0	3,743.5
Motor Veh Theft	594.0	536.0	543.0	559.0	533.5
Total Property Crime	5,217.0	5,329.0	5,476.0	5,414.0	5,543.5
TOTAL PART I CRIME	5,616.0	5,767.0	5,918.0	5,949.0	6,100.0

The rates of serious crimes, adjusted for population increase are shown above. With but a few exceptions, the overall trend in Alaska for Part I crimes is that they have been increasing during the past four years and are forecast to rise even higher in 1982.

Chart 5
Alaska's Ranking Among the
Fifty States for Index Crimes
per 100,000 population

Crime Categories	1979 Ranking	1980 Ranking
Violent Crime		
Criminal Homicide	5	19
Forcible Rape	1	2
Robbery	28	34
Aggravated Assault	16	13
Total Violent Crime	19	20
Property Crime		
Burglary	25	30
Larceny/Theft	10	11
Motor Veh Theft	9	8
Total Property Crimes	10	14
TOTAL INDEX CRIMES	12	14
Population	50th	50th

Although still having the least population of all the states, Alaska nonetheless had the highest and second highest rate of rape in 1979 and 1980, with slightly lower rates for other crimes. On the average Alaska is the 12th and 14th highest state for incidence of Part I crimes.

Chart 6
Statewide
Part I Clearance Rates
1981

	ACTUAL OFFENSES	OFFENSES CLEARED	CLEARANCE RATE AS A PERCENT
Violent Crime			
Murder	60	42	70
Rape	419	168	40
Robbery	467	95	20
Aggravated Assault	1,564	1,034	66
Property Crime			
Burglary	5,410	872	16
Larceny/Theft	16,079	3,776	23
Motor Veh Theft	2,822	749	27
TOTAL	26,281	6,736	25%

An offense is said to be cleared when a law enforcement agency has identified the offender, there is enough evidence to charge him, and he is actually taken into custody. The arrest of one person can clear several crimes, or several persons may be arrested in the process of clearing one crime.

During 1981, only 25% of the serious crimes in Alaska were cleared. During the past several years, the clearance rate has remained almost the same.

The foregoing statistics portray the increase of crime in Alaska from several different viewpoints, also show that on a per capita basis Alaska is number 14 of the 50 states for incidence of crime and that only about one in four crimes is ever solved. With these relatively high rates of serious, often violent crime, the development of a full services forensic laboratory would aid police in apprehending suspects and district attorney's in prosecuting the accused, thereby increasing the clearance rates.

C. Public Attitudes about Crime

There can be little doubt of the public's concern about rising crime. About five years ago the Dittman study, which is the last known opinion survey about crime in Alaska, showed several significant conclusions:[3]

- Most people in Alaska believe crime is rising faster than the population. Urban people believe crime is rising more than rural people.

- One of the basic causes of crime in Alaska is the justice system's failure to punish criminals.

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[3]Dittman Research Associates, Public Opinions about Crime and Criminal Justice in Alaska, 1976.

A year before the Dittman study, another attitudinal study by the Rowan Group showed that one of the four perceived causes of crime in Alaska is that "the police have failed and this has caused crime." The public believes in a toughening stance toward crime according to the Rowan report, by denying right to bail for certain offenses, by being against plea bargaining and by perceiving that the purpose of jail is to remove dangerous people from society.[4]

The preceeding statistics about incidence of crime show an overall increase. One can assume the public's concern about crime has correspondingly increased and that public attitudes have remained firm.

The development of a forensics' crime laboratory in Alaska to make the job of law enforcement and prosecution more effective would therefore seem to have broad public support.

D. Increasing Delays for FBI Laboratory Tests

Perhaps the greatest reason for Alaska to develop a full services Crime Laboratory is that investigations are being hampered by the increasingly longer time required to receive results of tests now routinely being sent to the FBI laboratory in Washington, D.C. According to the Criminal Investigation Bureau of the State Troopers, and many local law enforcement agencies, the time required for laboratory tests of a routine nature from the FBI now require from four to six months.

[4]Rowan Group Report on the Criminal Justice System of Alaska, July 1976.

The apparent reasons for this situation is a general budget tightening among federal agencies, an apparent re-examination of the extent of federal assistance following a General Accounting Office (GAO) review, and an ever increasing number of requests nation-wide for FBI laboratory services.

The GAO report indicates that, among other conclusions, forensic testing by federal laboratories of the FBI, Drug Enforcement Administration, and the Bureau of Alcohol, Tobacco and Firearms, is in effect inhibiting the development of local and statewide forensic laboratories, which is contrary to the federal policy of decreasing reliance on federal laboratories.[5] The report recommends that the Attorney General and the Secretary of the Treasury require the heads of these federal agencies develop a coordinated plan providing for a phased reduction in Federal crime laboratory assistance to State and local law enforcement agencies. Such a plan should:

- provide a time schedule which will enable the States to prepare for the phased reduction in Federal laboratory assistance;

- discontinue the practice of accepting routine requests from local law enforcement agencies, thereby bypassing laboratories where the capability exists or should be developed; and

- define the complex or sophisticated analyses which the Federal laboratories should continue to perform.

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[5]U.S. Government Printing Office, General Accounting Office, "Federal Crime Laboratories Lack a Clear Policy for Assisting State and Local Jurisdictions," Sept 12, 1980.

Dramatic evidence of the situation facing the FBI laboratory were two telephone calls received by the Trooper's Criminal Investigation Bureau during mid April 1982. Both calls were from the FBI laboratory inquiring about the necessity of two examinations of hairs and fibers that had been forwarded earlier by CIB investigators. Both cases involved double murders.

Also, items sent to the FBI laboratory, if to be tested for other than fingerprints as well as for fingerprints, are not to be examined by a local laboratory for just fingerprints. The FBI wants to perform all tests, utilizing their own personnel. This policy causes additional delays in receiving examination results.

The problem of long turn-around time often collides with the speedy trial rule in Alaska, [Criminal Rule 45(b)], which requires that the trial begin within 120 days following arrest, barring any delays by the judge as may be requested by either side.

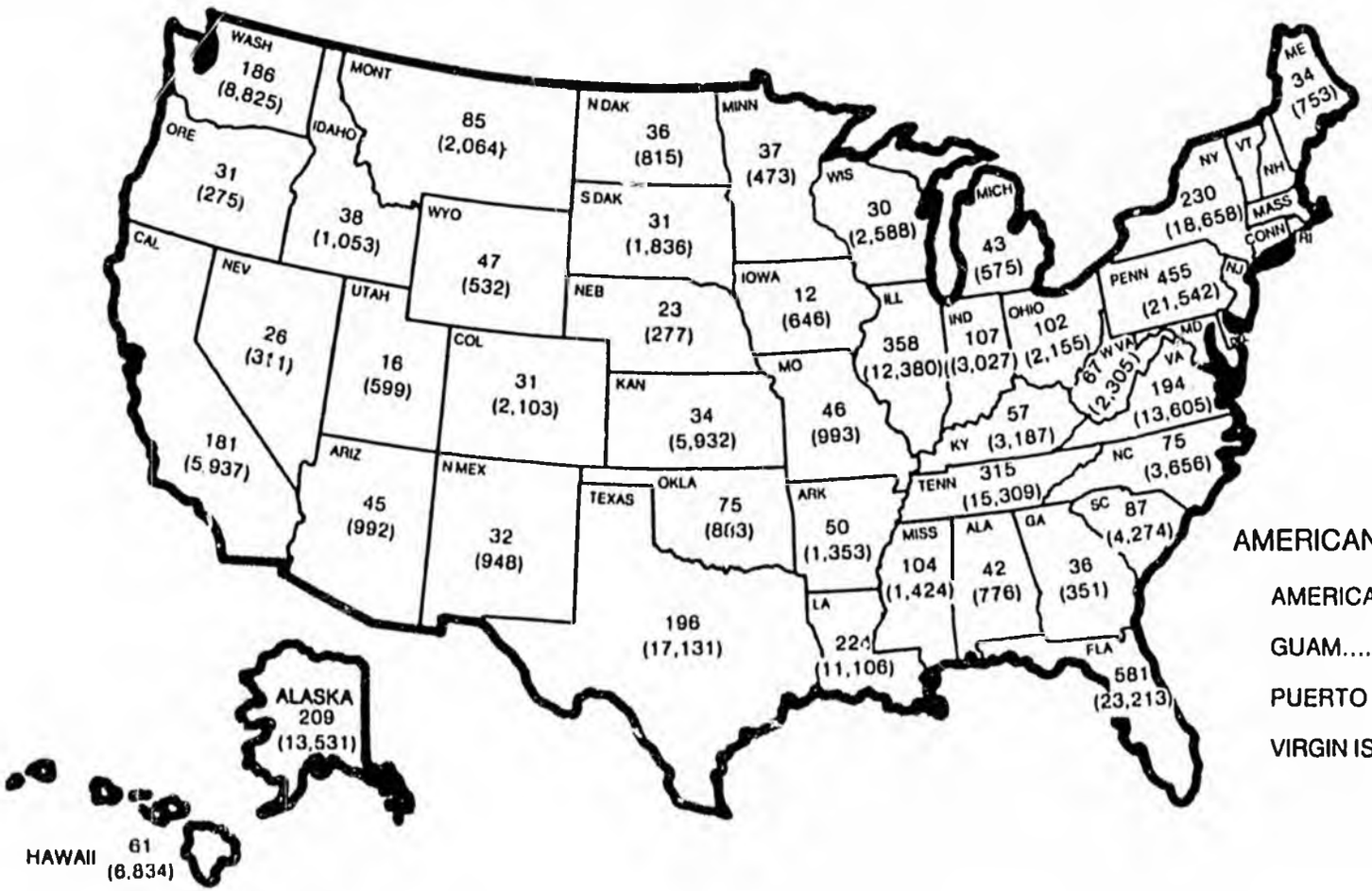
The restricting of services by the FBI will adversely affect Alaska more than any other single state because of the extreme reliance Alaska has historically placed upon FBI resources and assistance. That this is so, is in large measure a function of Alaska having the smallest population of any state, and thus Alaska is one of last states to be able to justify a crime laboratory. The almost total reliance by Alaska upon the FBI Crime Lab is shown most dramatically by the data and map shown on the following page. As is obvious, the 209 requests from Alaska are within the top ten highest of all the states. When calculated as a percentage of the population, Alaska has the highest number of requests to the FBI laboratory. Alaska, therefore, will be the state most adversely affected by the restriction of services of the FBI laboratory.

FBI LABORATORY

Assistance To Non-Federal Law Enforcement Agencies

REQUESTS RECEIVED 6,599
EXAMINATIONS CONDUCTED (297,832)

FISCAL YEAR 1981



VT	167 (6,958)
N.H.	81 (848)
MASS.	56 (1,301)
CONN.	171 (4,345)
R.I.	73 (6,163)
N.J.	233 (8,589)
DEL.	188 (13,394)
MD.	539 (20,957)
D.C.	357 (17,610)

AMERICAN POSSESSIONS

AMERICAN SAMOA	1 (63)
GUAM	11 (252)
PUERTO RICO	1 (1)
VIRGIN ISLANDS	72 (2,124)

FBI, Crime Laboratory Digest, Dec. 1981

Increased turn-around time is also occurring with the very limited capabilities of the existing laboratory. As of April 1982, the average time required for test results is up to two months for just drug-related tests, although turn-around time for fingerprint work is from one to two days.

E. Judicial Problems Caused by Delays

Investigators and prosecutors facing delay in obtaining forensic tests also face going to trial without adequate time for preparation. This is particularly true if the results of the test are needed before additional investigation can occur. While continuances can and are requested to permit additional time, they cause calendaring and scheduling problems for both the court and participants in the proceedings.

While many continuances in proceedings have occurred as the result of delays in obtaining laboratory test results, at least one judge has suppressed the states' evidence relative to the results of crime laboratory tests because of violations of Discovery. In that case, (Alaska vs. Lewis, Feb 1981) the FBI's formal laboratory report was not available until the morning of trial, for several reasons. In any event, due to this problem, several earlier discovery violations, and emphasizing that the state could have requested a continuance, the trial judge ruled that the test results and testimony concerning them would be suppressed.

Although overturned by the Appeals Court which said the results of the suppressive sanction are capricious and thus defeat the objective of Discovery it is important to note that the opinion said the Supreme Court has not completely ruled out excluding evidence from forensic tests as a possible sanction for delays by the state.

Defense attorneys can also point out that a continuance imposes a hardship on their clients because they would have a serious, felony charge pending against them for a longer period of time if a continuance is granted.

Continuances based upon lack of timely test results may also be questioned by defense attorneys who might object on the basis that there are other laboratories which can obtain test results in a timely manner, thus questioning that if the state cannot obtain timely results, they could contract with other facilities that can do so. In the future the state may be faced with an order to "show cause" as to why it doesn't use other laboratory facilities. In addition, defense attorney's have the right to examine evidence and should be afforded this opportunity without having to request a delay in the trial in order to do so. Additionally, the state should have time to prepare a rebuttal.

F. Use of Other Laboratories

Although a given test or tests within particular disciplines can be performed by private laboratories in addition to the FBI (and indeed this concept is included in this plan), it would not be feasible to rely upon other facilities for the entire range of criminalistics tests required by police and prosecutors in Alaska, for many reasons.

Use of other facilities over which the state has no control would mean that there would be no control over the caliber, background and experience of the technicians performing the work, nor of the degree of sophistication of the tests and equipment employed. There are already too many instances of less than qualified persons who have testified in Alaska to the results of tests, only to be proven wrong. Such discrediting of persons reputed to be an expert causes long

term harm to the profession of criminalistics, and casts a shadow over the result of all forensic tests.

Use of other facilities may also result in problems relating to the unbroken "chain of custody." Unless it can be shown that items of evidence have been in continuous custody of an officer, there is a question of whether the evidence has been altered. Use of a laboratory unaccustomed to the strict requirements of law enforcement may result in a break in the chain of custody, thereby permitting doubt to be cast upon the evidence by the defense attorney.

Use of other facilities will also prove to be more expensive than if the same capabilities existed in a state crime lab. Reliance upon out-of-state labs and their personnel will require the state to pay the transportation plus expenses of lab technicians to travel to Alaska to testify in court. In addition, the cost of the tests themselves can reasonably be assumed to cost more from private enterprise, since private firms exist to make a profit.

Reliance upon non-state facilities also involves the risk of the private firm going out of business and not performing any additional tests. This is exactly what occurred in late 1977 when the Alaska Medical Laboratories suddenly went out of business. As a result the Troopers were left with a number of items of evidence requiring forensic examination. With no other facility in the state and the need to have these tests performed, the Troopers formed what is now the very limited crime laboratory that exists now.

G. Value of Forensic Examinations

A major value of forensic examinations not often realized is the high evidentiary value they represent, and the positive impact they can have upon a jury.

An eye witness to a crime is often considered by the public to be the best possible evidence in determining guilt. While an eye witness is indeed important to a case, eye witnesses have to rely upon their memory, and a person's memory is fallible. The results of a carefully conducted forensics examination, however, do not rely upon memory. In cases where eye-witnesses are not available, forensic examinations are even more important, for they can present irrefutable conclusions, both to help establish the innocence or guilt of an accused. Civil rights organizations and similar groups concerned with instances of alleged unequal treatment of poor and minority persons charged with a crime should, in particular, support a professional criminalistics facility, since it offers completely unbiased evidence about a suspect.

Plainly, without a full services crime lab in Alaska the benefits of the high value of criminalistic tests will simply not be available. The efforts of police and prosecutors may therefore be less effective.

H. Support by the Criminal Justice System

One of the most compelling reasons for Alaska to develop a full service crime laboratory is the unanimity of need for such a facility by all the law enforcement agencies, district attorneys and judges. Police officers at both state and local levels consider the development of a full services crime laboratory as long overdue. They recount numerous criminal case investigations and accident scenes

that would have been enhanced if criminalistics services would have been available in a timely manner. Prosecutors and judges recall past cases in which the results of criminalistics tests were a significant part of the trial because the standard of proof is so high in Alaska. they also recall other cases that were weakened by lack of adequate criminalistics tests or in which evidence was overlooked.

I. Impact of Drug Legislation

Another reason for enhancing the existing statewide crime laboratory is the impact of legislative appropriations to detect and apprehend illicit drug violators. These funds were used for a third Trooper for the Anchorage Metro squad during 1981, the activation of a full-time narcotics investigator in Juneau during 1982, the addition of a new drug dog and trooper at the Fairbanks airport in late 1981, and the addition of five new drug investigators for the Troopers in 1982. These additional drug investigators plus increased efforts by local police departments will exacerbate the existing problem of timely drug tests by the existing crime laboratory, as additional requests for identification of suspected drug substances are received.

In summary, the following are the major reasons a full services crime laboratory is needed in Alaska:

- Increasing delays in obtaining test results from the FBI Crime Laboratory, and the existing limited state laboratory.

- Problems to the judiciary caused by delays in obtaining test results.

- Inability of the existing laboratory to perform other forensic tests, due to the number and priority of the drug tests required.

- Inability of the forensic chemistry section of the laboratory to expand their services due to physical space and personnel limitations.

- The extremely adverse affect upon Alaska resulting from cutbacks in service by the FBI laboratory.

- The numerous disadvantages inherent in using private facilities.

- The high evidentiary value of results of criminalistics tests.

- The need to address the increasing crime rate in Alaska by expanding scientific testing of crime scene evidence.

- Virtual unanimity of agreement for the need of a full services crime laboratory by criminal justice system agencies.

- The desire of society to reduce crime, resulting in a more peaceful community.

In assessing the need for a full services crime lab in Alaska, one can also attempt to foresee the consequences in the future of the failure to develop a crime laboratory. One possible result may be the emergence of several small, rather restricted efforts of local law enforcement agencies to provide their own testing facilities. These will probably be of limited scope, overlapping, and fragmented

efforts. Other penalties may be reasonably inferred, including test results from a wide array of other facilities and experts of varying degrees of competency as the larger police agencies attempt to cope with the lack of a single statewide crime laboratory. The smaller police departments probably will not be able to afford some of the prices charged by private facilities and thus will be forced to do the best they can without scientific analysis of evidence. Unfortunately, at least one consequence is already occurring. That is the decreasing importance some police officers attach to laboratory tests and analysis of crime scene evidence. This in not from a lack of appreciation of the value of such tests, but from the double frustration of knowing the value of forensic examinations and being unable to obtain professional testing in a timely manner. In many cases, police officers have no other choice than to do without forensic analyses. One can safely assume their investigations and the prosecutors efforts are less effective in proving the innocence or guilt of the accused. In an era of increasing concern about accountability of government, increasing costs of criminal justice, and rising crime rates, Alaska needs more than just additional police officers. It needs the means whereby their efforts can become more effective.

II. HISTORICAL BACKGROUND

The Alaska State Troopers Crime Laboratory, located at their headquarters building in Anchorage, is the only statewide law enforcement crime laboratory in Alaska. It is relatively new, having begun in early 1978 following the closure of the Alaska Medical Laboratories in Anchorage, which had been the primary facility for laboratory work for law enforcement in the State. Many tests, of course, continue to be handled by the FBI and other specialty laboratories throughout the "lower 48."

The laboratory presently has a staff of three chemists, two latent fingerprint examiners, a photographer, an evidence clerk and three other clerks. Two additional latent fingerprint examiners are located in Juneau.

At present the laboratory provides a relatively narrow range of services due to crowded conditions, heavy caseload and a limited staff. Most of the work involves drug testing, photographic services and fingerprint comparisons. However, some work can be done in blood alcohol, serial number restoration, limited serology and some arson related tests. Turnaround time to receive results varies according to the analyses required and section involved but may be up to four weeks or longer.

Due to existing limitations, private laboratories and in particular the FBI laboratory, are being utilized for testing of questioned documents, toxicology, serology, firearms identification and tool marks examinations, hairs and fibers and other specialized assistance. Turnaround time for FBI laboratory tests may be from four to six months.

The laboratory also receives and files duplicates of drivers licenses and personal identification cards issued by the state, as well as copies of "mug shots" from correctional facilities.

Copies of these are made by laboratory personnel upon request by law enforcement agencies to assist in their efforts in investigation.

The laboratory also prepares photographs for line-up purposes.

Major items of equipment presently available in the laboratory include an infrared and ultraviolet spectrophotometer several chromatographs, five microscopes of varying capabilities, two comparison microscopes, a Mettler Hot Stage, balances, centrifuges and other equipment for specialized purposes. Additionally, laboratory personnel assist investigators in gathering evidence at crime scenes and testify in court.

Clients of the laboratory include the uniformed military services in the state, the Drug Enforcement Administration, the U. S. Marshal, the FBI, the entire law enforcement community at the local level, the State Troopers, the Fire Marshal, and several specialized non-law enforcement agencies such as Probation and Parole, Treatment Alternatives to Street Crime (TASC) and others.

There are no fees charged to client agencies by the laboratory for work they perform or for work they forward to another facility. Obviously tests that agencies arrange for directly with other laboratories are paid for directly by that agency with the exception of the FBI laboratory which does not charge for it's laboratory services or for expert witness testimony.

To assist their clients the laboratory has printed a Crime Laboratory Manual and a small brochure which generally describes the laboratory capabilities and provides information about packaging and submittal of evidence to the laboratory. Manuals have been sent to all State Trooper posts and detachments and all local police departments and other concerned agencies.

Evidence gathering kits for field use have been developed for gunshot residue, rape, urinalysis, and blood alcohol.

As of the beginning of 1982 the chemistry section of the laboratory was experiencing an increasing delay or backlog of tests. As a result a priority system for testing has been set up to ensure that efforts are directed to the most pressing needs. In addition, extensive testing beyond establishing the identity of a substance that indicates a crime has occurred is not performed, recognizing the futility of extensive testing for a case which may not go to court or cases in which the defendant pleads guilty.

There are several private specialty laboratories and hospitals in Alaska that perform tests and analysis in specific fields, such as petroleum products, waste water, environmental concerns, toxicology and other areas.

III. GOAL STATEMENT

The goal of the proposed full-services crime Laboratory is to aid in the quality of justice in Alaska through the impartial and professional analysis of evidence obtained from the scene of a crime.

The term "full services laboratory" has broad implications. The major concept is the performance of all tests requested by investigators and prosecutors whether such tests are performed in-house or by another specialty laboratory elsewhere in Alaska or in another state.

Within this concept is the hiring of a full time professional laboratory director and sufficient staff to perform the tests routinely required by investigators. Other less frequently required tests that demand very specialized skills and sophisticated equipment and that could not be performed in a cost effective manner in Alaska would be performed by external agencies. Thus the level of need for bullet comparisons may be shown to justify hiring a Firearms Examiner now in the laboratory whereas the need for analysis of an infrequent nature, such as vehicle lubricants, would result in those tests being performed at another facility.

A full service lab would also require additional equipment, and a larger physical plant than now available. Several satellite laboratories could be established in the larger metropolitan cities in the years ahead for handling high volume work such as fingerprints and drug testing.

The concept would also include technical assistance in crime scene analysis, evidence gathering, packaging, and shipment, forensics training courses for all law enforcement agencies, and courtroom testimony by laboratory personnel.

All tests by the laboratory and external agencies would be performed on a no-cost basis to the requesting agencies.

Laboratory management would be improved in every respect. Turn-around time for test results would be measured in days rather than weeks.

The intent and philosophy of a statewide crime laboratory for Alaska is to offer the highest level of service to law enforcement through accurate and reliable tests and analyses in a timely manner while remaining flexible and capable of responding to the changing needs of the law enforcement community in the years ahead. The balance of this plan addresses the foregoing aspects in detail.

IV. CAPABILITIES OF A FULL SERVICE LABORATORY

The value and need for a modern forensics laboratory has been presented earlier. Since a laboratory is such a crucial capability for investigations and prosecutors as well as for an accused, a modern crime lab must have a broad range of scientific disciplines available, either in-house or available through an outside facility.

At this point, it is useful to consider certain definitions and terms that may not be familiar when referring to crime laboratories.

A Criminalist is an individual trained in the scientific and professional discipline of criminalistics, a science directed to the recognition, identification, individualization and evaluation of physical evidence by application of the natural sciences in the reconstruction of events related to a crime and in the connection or elimination of a suspect with that crime.

Criminalistics is a broad term that involves the application of the natural sciences and scientifically based techniques to the analyses of physical evidence. Criminalists therefore span a wide range of disciplines and perform examinations on such items of evidence as alcohol, blood, body fluids, drugs, firearms, glass, hair, fibers, paint, accelerant residues and similar evidence. Criminalists performs analyses utilizing techniques such as macro and microscopic examinations, qualitative and quantitative chemical analysis, and serological determinations. They use complex measuring, recording and testing instruments such as the gas chromatograph, and mass spectrometer, infrared and ultra-violet spectrophotometers, polarizing microscopes and others. They must be prepared to travel throughout the state to testify in court as an expert witness and to assist law enforcement officers and prosecutors in analyzing and interpreting

evidence. They also give instruction in the field of criminalistics at police officer training schools and to conduct examinations of crime scenes for physical evidence in complex cases.

Professional criminalists usually have a minimum of a BA or BS degree in criminalistics, chemistry, biochemistry, biology or other closely related natural or physical science, to prepare them as a forensic serologist, a chemist, trace evidence examiner, and related jobs. Criminalists can also be referred to as forensic chemists, forensic biologists etc, depending upon their areas of expertise. The term forensic means belonging to, used in, or suitable to courts of judicature. Thus the term forensic lab may be used synonomously with crime laboratory, or a criminalistics laboratory.

In addition to the various criminalist fields, there are other professional positions in a good crime laboratory, including the Fingerprint Examiners, the Photographer, a Police Artist, the Firearms and Tool Marks Examiner, the Polygrapher who operates and interprets the polygraph, a Questioned Document Examiner, an Explosive Ordnance Technician and possibly others. Although not all these individuals may have an academic degree, those employed in these fields are properly considered professionals within each of their respective disciplines. Each has completed substantial professional training and is accredited by his professional organization nationwide. Each may expect to become qualified as an expert witness in a court of law and offer testimony, as well as supervise and train lower ranking employees, assist law enforcement officers and prosecutors in analyzing and interpreting evidence, and travel to crime scenes to assist in gathering evidence.

The development of crime laboratories in the U. S. may be described as rapid growth accompanied by a lack of national and

regional planning and coordination."[6] Some have developed almost solely for drug testing purposes, others for a full range of forensic services. Some work in concert with a Medical Examiner system while others are independent. While most laboratories function as an element of a law enforcement agency, others are within the prosecution function. A few are affiliated with Universities.

Laboratory staffs and their expertise also vary reflecting the size of client population served, government structure, and available resources.

The diversity of laboratories makes it impossible to select any one as typical, or as a model to follow. However, the importance of forensic skills to law enforcement is the National Advisory Commission on Criminal Justice Standards and Goals for the Police which recommended that "every state should by 1982 establish a consolidated criminal laboratory system composed of local, regional, or state facilities capable of providing the most advanced forensic science services to police agencies."[7]

Some of the more common areas of expertise within a forensics laboratory include the following:

A. Toxicology

Toxicology is the detection and identification of the presence of drugs and poisons in body fluids, tissues and organs. The Toxicologist is not restricted to crime laboratories. They are often found in hospitals to identify drug overdoses, and other medical related

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[6]Saferstein, Richard, "Criminalistics, An Introduction to Forensic Science," Prentice Hall, 1977, p. 7.
[7]U.S. Government Printing Office, 1973.

facilities involved in monitoring drug usage and other potentially toxic substances such as alcohol abuse, tests on children exposed to leaded paints and urine analysis of addicts in methodone maintenance programs.

Although a Forensic Toxicologist is by definition one who is involved in work relative to violations of criminal law, the responsibility for performing toxicological services in the criminal justice system varies considerably throughout the U.S. In some areas, the Toxicologist may reside in a Medical Examiner's system whereas in other areas the Toxicologist is in a crime laboratory. Still other areas may share his services.

In Alaska, the location of a Toxicologist is yet to be determined, and is dependent upon if and when a Medical Examiner system becomes established, the relative need for Toxicological services in the crime laboratory, existing external services and available funding. Wherever ultimately located, it is a virtual certainty that a large portion of the workload will be the analysis of blood to determine the presence and amount of drugs and alcohol, since alcohol and drug abuse figures so prominently in criminal acts.

B. Firearms and Tool Marks Examination

A Firearms and Tool Mark Examiner compares the minute random markings on surfaces which can impart identification to inanimate objects, such as identifying a spent bullet to a particular firearm, a scratch, abrasion or indentation on a surface to a particular tool or object that caused such marking, or a tire track, or boot imprint to a particular tire or to a particular boot, and similar related work. As an example:

- A bullet is obtained during the autopsy in a murder case. Examination reveals it to have been fired from a .38 caliber Smith & Wesson revolver. Later a suspect found with such a weapon is arrested and the weapon submitted for examination. The gun is test-fired and the bullet compared to the bullet found during the autopsy. The examiner finds that the minute striations on the bullet caused by irregularities on the inner surface of the barrel of the revolver, match the markings on the bullet recovered from the murder victim.

- Another example relates to tool marks. The microscopic nicks and irregularities or cut marks on the jaws of a bolt cutter found in a suspects car was used to cut an identical lock as was cut during the course of a burglary at a lumber yard. The first lock was found to contain the same marks as on the lock that was cut to allow access to the lumber yard.

C. Questioned Documents Examination

A Questioned Documents Examiner examines handwriting and typewriting to ascertain the source or authenticity of a questioned document. His efforts involve both visual and microscopic comparisons to uncover all effort designed to change the content or meaning of a document, including reconstruction of written contents of charred or burned paper and indented writings on a pad of paper.

The normal handwriting of two different individuals has never been totally and exactly duplicated. Individual variations exist in angularity, slope, speed, pressure, size, letter and word spacing, connections and writing skill in addition to margins, spacing, alignment and so on.

Variations in typewritten letters occur as a function of the user and damage to the machines moving parts. Vertical alignment and spacing of the characters, defects in each typeface, pressure variations and other individualizations all combine to enable the Examiner to make comparisons between a given typewriter and the questioned document, and between samples of a given persons handwriting compared to the document in question. The Examiner will often use microphotography with a comparison microscope to produce photo enlargements to compare parts of the questioned document with perhaps a suspect's handwriting or typewriter.

D. Forensic Serology

Forensic Serology involves the analysis of body fluids, such as blood, semen, and saliva to attempt to limit the population of the source of such fluids found at a crime scene. A major key to limiting the source population is through blood grouping and identification of certain enzymes within the blood. Samples of saliva, such as found on cigarette butts and toothpicks may yield information about the blood of the individual. Identification of seminal stains on clothing and swabs may also yield information about the blood type of the individual involved, thereby limiting the population to only those persons with a certain blood identification. For example:

- A suspect is in custody following a stabbing. He has what appears to be blood stains on his clothing. The stained clothing should be submitted for examination by the evidence collector, along with known blood specimens from both the suspect and the victim. Serological examinations may reveal whether the blood stains on the clothing could have originated from the suspect, or the victim, or possibly another source.

- Stains are noted on a handkerchief in possession of a rape suspect. Analysis in the laboratory shows them to be seminal stains containing intact spermatozoa as well as two blood stains. The seminal stains are further analyzed and found to be from Group A which matches the suspect who is a secretor. The blood stains are determined to be group O, however, which differs from that of the victim.

E. Forensic Chemistry

Forensic chemistry involves the analysis and subsequent identification of unknown substances. Although testing of substances thought to be illegal drugs in terms of identifying the drug and its relative purity occupies an extensive amount of time of the Forensic Chemist, he can also perform other chemistry-related analyses such as identifying trace amounts of an accelerant from a suspected arson fire.

F. Trace Evidence Examination

Trace Evidence refers to the often very small items such as human hairs, fibers, paint chips, bits of broken glass, soil and similar items that are transferred between individuals and objects during a crime. If recovered, they can often corrobrate other evidence developed during the investigation. Although in most cases trace evidence cannot by itself provide positive identification of a suspect, the results of a laboratory examination may narrow the origin of the minute bits of trace evidence to a group that includes the suspect, such as:

- A suspect with brown hair is arrested near the scene of a rape. His shirt has foreign hair and fibers on the shoulder. The blond hair on his shirt is

obviously different from his own. The foreign fibers appear to be those commonly used in rugs. It is determined by laboratory analyses that the hair could have come from the victim's head, and the nylon could have come from the rug at the scene of the rape.

- A burglary suspect is caught outside a building where entry was gained through the wall. His clothing is submitted for examination. Microscopic particles of brick, plasterboard, paint and fiberglass insulation found on his clothing match the corresponding materials from the building. It is unlikely that such a combination of materials would be from any other source than the burglarized building.

G. Fingerprint Examination

The Fingerprint Examiner attempts to match fingerprints found at a crime scene with the inked impressions of fingerprints by studying the individuality of their ridge characteristics. Acceptance of fingerprint evidence by the courts rests upon the assumption that no two individuals have identical prints, which is substantiated by the many millions of individual prints that have been classified throughout the world, and barring accidental or surgical removal of the finger, that fingerprints do not change during a person's life.

Matching of fingerprints involves the type, number, and relative location of the ridge characteristics, including the ridge endings, bifurcations or divisions of the ridge, and some that form enclosures. These are collectively referred to as "minutae."

The work of the Examiner also includes elimination of individuals as suspects, establishing the identity of a

deceased person through their fingerprints, conducting training sessions for law enforcement officers and testifying as an expert witness in court. The Examiner will also utilize photographic enlargements to demonstrate to the court how comparisons are made and identification effected.

A major goal of the Examiners is to be able to identify fingerprints found at a crime scene. However without a suspect the tedious manual matching of latent prints from a crime scene to inked impressions on ever increasing number of fingerprint cards effectively precludes the use of latent prints as a significant tool for the investigator. Within the last few years, several jurisdictions nationwide and some foreign countries have purchased an automatic fingerprint identification system using minutae-based technology which holds considerable promise as an aid to the fingerprint examiner. Funding for such a system in Alaska was appropriated by the 1982 Legislature.

H. Photography

The Photographer in a crime laboratory requires considerable artistic, creative, and special technical skills, independent interpretation of equipment needs and techniques. He makes contact and projection prints, enlargements, slides, transparencies, overlays, and cuts and edits film. Forensic photography includes accident scene coverage, photographing various aspects of a crime scene using specialized techniques such as close-up photography to record small items of trace evidence including fibers and particles, tire and boot impressions, and related items. He may use special photographic techniques to record fingerprints, utilize other special techniques for surveillance work and generally respond with appropriate equipment and techniques to whatever situation is confronted.

The foregoing are the task skills of a larger Forensic Laboratory. They may involve one or more specialists within each field depending upon the type caseload experienced in the region the lab serves. Smaller labs will have correspondingly smaller staff and capabilities reflecting smaller number of clientele and availability of resources.

V. IMPROVING FORENSIC SERVICES IN ALASKA

This section - the largest in the plan - deals with the many perceived inadequacies with the present level of forensic services in Alaska by addressing each of the aspects that comprise a full services laboratory, initially describing the existing situation and problems and then presenting recommendations to solve these problems. (For ease in reference all the recommendations have been single spaced). Some problem descriptions relate to forensic disciplines and how they can be initiated or improved, while others deal with the internal administrative aspects needed for a successful crime laboratory. All, however, have a substantial bearing upon improving forensic services in Alaska.

A. Additional Forensic Skills

At present, the lab has three chemists whose time is devoted almost entirely to drug and alcohol analyses, although the senior chemist can perform serial number restoration, limited serological tests and some arson related work. Four other personnel perform fingerprint work, another handles photographic work, and four clerical personnel provide support services, including evidence storage. Beyond the fingerprint and photographic services, the existing laboratory is essentially a drug identification facility rather than a broadly based forensics laboratory.

Law enforcement agencies, judges and prosecutors throughout the state desire a far broader array of analytical expertise. Interestingly, the needs of smaller police departments initially appeared different than their more urban counterparts. Their interests are primarily in fingerprints, drug testing, photography and questioned documents while the larger departments, State Troopers and

prosecutors want the additional expertise of serology, toxicology, identification of hairs and fibers, firearms and tool mark examinations. The two views are actually compatible when one considers that the larger departments experience the more complex and serious crimes, which by contrast occur only infrequently in the smaller towns. In addition, the smaller departments often call upon the State Troopers for assistance when major crimes or complex problems arise.

The result of the lack of greater forensic capabilities in the laboratory, the familiar long turn around time to receive test results from the FBI, and general lack of knowing where to turn or what else to do has all acted to dampen the importance of physical evidence. Many times, police officers commented that they don't send items to the FBI because of the delay involved, and their desire to not further contribute to the backlog problem by requesting laboratory analysis in "minor" cases. As the result, one may conclude that lack of in-state forensic capabilities results in the less than effective use of crime scene evidence, particularly in the more routine cases.

The decreasing reliance upon analysis of crime scene evidence, for numerous and varying reasons and the very narrow range of services available in-state has in turn contributed to a decrease in appreciation at the local level of the value of forensic services. In part, this may be traced to a lack of training that should be afforded by a full services lab, as well as not having a broader range of services available. Thus not only does law enforcement not really have access to forensic services, they are also experiencing a decreasing realization of the value of those services.

Another situation encountered in the field is the lack of any usable data and statistics to determine the extent of

need for additional forensic skills by the law enforcement community. Neither police or prosecutors could quantify their relative needs. They could offer only "gut level" assessments, such as"we really need a ballistics expert", and " I hope you can get a questioned documents examiner because we're really having a problem with forgeries". Or, "the lab could really help us in traffic investigations by obtaining a Trace Evidence Technician", and similar observations.

A review of statistics kept by the laboratory are not particularly useful because they cannot reflect the impact that will occur in the future as the result of expanded forensic capabilities and services, a professional directions, and of training offered to the law enforcement community in the techniques and values of forensic examinations.

Notwithstanding the foregoing, several conclusions can be made:

- Although current field and laboratory data are not adequate to determine the extent of need in terms of the number of criminalists needed in a given discipline, there is general agreement on the type of expertise needed.

- Similarly, current data from the lab showing tests performed on an agency by agency basis are not going to be good predictors of when the quantity of specialized laboratory tests would justify the hiring of additional laboratory personnel.

- The fact that additional, new, forensic expertise will become available along with overall laboratory improvement and a new facility will in itself generate additional requests for laboratory services.

- Conducting training relative to crime scene analysis and the value and potential of forensic tests to the investigator, will have the effect of raising the visibility of forensic services, and consequently an increase in laboratory services.

One may safely conclude that the potential need for a full services laboratory is substantially out of proportion to the level of work now being performed within existing disciplines.

Recognizing the inherent difficulties posed by lack of empirical data, and the consequent need to rely upon subjective assessments, the following recommendations are made pertaining to additional forensic skills within the laboratory:

1. Develop Additional Forensic Disciplines

Based upon a surprising degree of uniformity from within the law enforcement community it is recommended that three additional criminalists be hired at the earliest possible time to handle forensic examinations in:

a. Serology
b. Trace Evidence
c. Firearms and Tool Marks Identification

The development of serological examinations is particularly important since unlike most physical evidence - hairs, fibers, bullets, etc. - blood and other biological tissues and body secretions routinely encountered in violent crimes, continue to degrade even after collection. Physical and chemical changes in aged blood and bloodstains can preclude the possibility of successful analysis. Since these changes cannot be reversed, it is imperative the analysis of serological evidence be conducted as soon as possible if the most information from a given specimen is to be obtained. In addition, some instrumentation is available in the existing lab and assuming space could be made available, serological examinations could begin soon. Moreover the chemist of the states Fish and Wildlife Laboratory in Palmer has had extensive serological experience and can provide technical assistance and consultation.

Although there is substantial interest in Toxicology as well, the state presently is using the services of the Fairbanks Memorial Hospital to perform examinations on body fluids. Although some logistical problems occur, there is in-state capability to perform these tests, whereas there is no facility for serological tests in Alaska. Thus those needs must all be performed out-of-state. In addition, any development of a Medical Examiner system in Alaska would have to include toxicological capabilities, which may be available to the Crime Laboratory. These new criminalists should be hired consistent with the recommended qualifications contained in this report.

2. Hire Additional Criminalist for Forensic Chemistry

Based upon the current forensic chemistry workload and the anticipated increase in requests for drug testing arising from increasing suppression efforts against illicit drugs, there is the need to provide an additional Forensic Chemist. If the three personnel in the new forensic fields have experience in drug analysis they could assist in drug testing while their specialty workload increases. If the individuals hired do not have that experience, it will be necessary to hire another Criminalists for drug testing. The hiring of the forensic chemist could be delayed if one or more of the three Criminalists has drug testing experience. By FY 85, it is anticipated that the serology, firearms and tool marks and trace evidence workload will have increased beyond the point of any continued help in drug testing.

3. Determine the Extent of the Need for Questioned Documents Examiner

There is a need for a Questioned Documents Examiner by numerous law enforcement agencies, although such need was seen as less pressing than the need for a Toxicologist/Serologist, Trace Evidence and Firearms Identification and Tool Marks Examiner. In addition, the use of a highly respected individual from Seattle has also assisted Alaska in major cases. On the other hand, the fact that the Questioned Documents Examiner in the Anchorage Police Department is working full time on just local matters seems to indicate that a serious need exists.

It is therefore recommended that the laboratory undertake an effort to better determine the extent of this need. It may be that a Questioned Documents Examiner should be hired before the Trace Evidence Examiner, or the Firearms Identification and Tool Mark

Examiner. Regardless of the sequence of hires, it is reasonable to project that all these skills will be needed by the laboratory within five years.

4. Hire Administrative Assistant

With the hiring of additional professional personnel the hiring of an experienced, full-time laboratory director who may also perform forensic tests, and the anticipated increase in the number of agencies being served by the laboratory, there will be a substantial increase in administrative and clerical work to be completed with a minimum of administrative oversight and direction. It is recommended an Administrative Assistant be hired who would serve as a personal assistant to the director, performing and supervising numerous interrelated administrative and clerical duties directly concerned with the work of the Director and the image of the laboratory. The wide range of future activities the Director will be involved in requires he have a staff member who is aware of everything that is happening in the laboratory and outside the laboratory that relate to it.

It is recognized that the present space limitations in the existing laboratory will preclude the immediate hiring of all the additional laboratory staff as recommended in this section. While some additional space can be reclaimed by cleaning out one evidence room and by possibly co-locating the OL Photo section with the White Collar Crime Unit, space problems will still remain.

5. Part-time Internships

It is recommended that the Laboratory Director contact the University of Alaska in Anchorage and Fairbanks to determine the feasibility of developing an internship program involving natural and physical science majors working part-time in the laboratory to help fulfill their course-work requirements. Appropriate security measures would need to be developed.

Initial contact with the Director of the Criminal Justice Center in Anchorage and his inquiries within the University system resulted in very positive response and the feeling that a student internship program involving a nominal stipend for work in the laboratory could be developed. Such assistance could be part of an Independent Studies Program within the University, or to complement existing course requirements.

The advantages of being able to obtain perhaps half day assistance from a graduate biology student in forensic chemistry could be significant, not only in terms of reducing the workload, but also to familiarize students with the field of forensics and possibly developing interest in later employment as a staff member in a crime laboratory.

6. Identify External Resource Agencies

Based upon the expressed need for other less frequent, often highly sophisticated forensic skills that cannot be justified in-house, it is recommended that the lab develop a directory of specialized facilities and individuals it wishes to employ from time to time. These facilities and individuals must have their credentials verified so that every test of whatever nature can be submitted immediately with every confidence that the personnel and procedures utilized will reflect the highest order of professionalism and that the tests will be performed and returned in a timely manner.

Once the directory has been completed, it may be necessary to make arrangements with the Department of Administration whereby the laboratory is authorized to deal directly with these external agencies, if the expense exceeds a certain figure.

Completion of determination of external resource agencies and personnel will hopefully enable the laboratory to develop procedures whereby client agencies can ship evidence directly to the specialty agency rather than shipping to the laboratory, which then reships to the specialty agency. The existing procedure is subject to extensive field criticism since it entails a longer time to receive test results and extends the Chain of Custody.

Present laboratory policy is apparently a manifestation of lack of expertise in the field in evidence handling. This problem should be met by the impact of the training team as described elsewhere. When lab concerns have been met, it is recommended that a procedure be developed whereby the requesting agency can send the evidence directly to the testing facility, perhaps through a telephoned authorization from the laboratory, or other means.

B. Satellite Laboratories

Within the concept of a full service forensics' laboratory is the idea of one or more satellite laboratories elsewhere

in the state to address the most numerous types of local requests for assistance - by any calculation, fingerprints and drug testing. The work level for drug testing in the existing laboratory already keeps the three forensic chemists at work full time. Existing and planned increases in identification of illicit drugs will increase the lab work load. Fingerprint personnel in Juneau now devote full-time attention to routine processing of fingerprint cards and associated administrative work, as well as training and the priority, on-scene response to crime scenes. The Anchorage fingerprint personnel are essentially in the same situation.

With the addition of the computerized fingerprint identification system, estimated to be completed by January 1984, there will be an increase in the fingerprint associated workload due to inputting the latent prints in the automated system and the comparisons required as the result of the respondents identified by the system. Up to 15% of the latent prints entered into the system are expected to result in a "hit". In addition there are numerous latents on file from earlier crimes awaiting system completion so that they can be entered. One may readily expect that additional court testimony by the examiners will be required as the result of increased identification of latent prints.

The question concerning this anticipated increase in workload is whether it should all be handled within the laboratory in Anchorage, or whether the advantages of regionalizing at least the most common services would be the better approach.

7. Needs Assessment

It is recommended that planning efforts be undertaken leading to the possible establishment of a satellite laboratory in Fairbanks and Juneau. Planning efforts

should include determination of drug testing and fingerprint identification workload that could be handled on a regional basis in those two cities, the impact of the automated identification system in Anchorage, and other factors that would justify establishing one or more regional laboratories of limited services and a date to open such satellite facilities. Cost estimates of personnel, laboratory space, equipment, and related information would also have to be determined.

On the basis of information available now, it appears that fingerprint identification would be required first, followed by forensic chemistry to handle regional drug testing. Two latent Fingerprint Examiners would be required in each satellite laboratory in order that each can verify the conclusions of the other regarding identification of latent fingerprints. Similarly two Forensic Chemists will be required in each sattelite laboratory.

Planning should also include provision whereby the transmittal of fingerprint cards from Anchorage to the satellite laboratory(s) can be accomplished more expeditiously and easier than is now the case, which involves taking four photographs of each card.

A clerk-typist would also be required in a satellite laboratory. If the satellite laboratory can be initially be co-located with a local police department or Trooper Detachment, it may be possible to obtain existing space and clerical assistance there, until the workload requires separate facilities and support personnel.

C. Fingerprint Examination

The present crime laboratory has four Latent Fingerprint Examiners. Two, including the Supervisor of the Section are located in Juneau and the other two in the laboratory in Anchorage. Anchorage services all of the state except southeast which is serviced by the Juneau personnel.

Fingerprints from all police and correctional agencies in the state plus applicants for 18 different job categories from Janitors to Attorneys are taken on two "10 print cards," which are forwarded to the Juneau based fingerprint

examiners where extensive processing occurs. In the case of offenders, one card is forwarded to the FBI for classification and entry into the national fingerprint files. The second card is maintained Juneau and file jackets and index cards are prepared. Case dispositions are entered into AJIS. Rap sheets are kept current. Duplicates are screened out and statistical data is developed. Information relative to job applicants is sent to the requesting agency. Rap sheet information is passed on to police and prosecutors, including inquiries from the "lower 48," and related clerical functions. A significant amount of clerical processing is performed by the two Juneau fingerprint examiners, including substantial typing.

All four latent print personnel examine evidence obtained at crime scenes to determine the presence of fingerprints as well as comparing latent prints with inked impressions of fingerprints of a suspect, if a suspect exists. Persons with a valid reason to be at the scene are also examined as suspects. On occasion, they are called to assist in obtaining fingerprints at a crime scene. They also print the fingers of dead bodies, conduct training courses, and testify in court.

Since the 10 print cards are all on file in Juneau, it is an easy matter for the Juneau latent examiners to compare crime scene prints with the fingerprint card of a suspect. However, the Anchorage based examiners whose case load averages about 60 per month compared to the 15 or so per month in Juneau, must call or teletype the Juneau examiners when they need to make a comparison with the inked impressions on the fingerprint card. To do so, high resolution polaroid photographs (four for every card at $1.75 for each photograph) are made in the darkroom in Juneau by the latent examiners and sent to Anchorage. The process also costs the price of a phone call if used, plus a minimum of two or three days for delivery.

The examiners also photograph latents developed on evidence in their darkroom as well as prepare enlargements of latent and inked prints to demonstrate how comparisons are made for use in court. The Juneau Examiners also prepare duplicates of mug shots in their darkroom, thus duplicating to some extent the function of the OL photo section in the Anchorage laboratory.

A by-product of having the fingerprint section supervisor in Juneau is that when the Laboratory Director, who is in Anchorage, wants to contact the supervisor about an issue relating to Anchorage latent print personnel, the Director must contact the supervisor in Juneau, who then contacts the Anchorage personnel about the matter. Predictably the Director has gone directly to the Anchorage personnel, thus by-passing the section supervisor, and creating a management problem.

Collection of fingerprints in Alaska began essentially at Statehood. Initially very few were involved. By the mid 1960's, only 50 or so fingerprint cards were being received each week. Ten years later, the flow of prints had increased by five-fold to about 250 per week. By 1980, this had increased to 350 per week until the present flow of almost 400 per week was reached. This is expected to increase to about 600 in 1983.

Although an estimated 90,000 fingerprint cards are on file, (or 900,000 separate prints) these are of little practical value to an investigator who is successful in raising latent prints at a crime scene if he cannot develop a suspect whose prints he can have compared with those prints found at the scene. The only way, at present, to compare latent prints found at the scene with those on file is to manually examine each file print against the latent. Although successful in a few instances in years past, it is

increasingly impractical to do as the number of file prints increases. Thus there are several thousand latent prints that have been obtained at crime scenes over the years that have simply been filed in both Juneau and Anchorage. The possibility of computer entry and matching of these numerous latent prints with the thousands of fingerprint cards on file in Juneau holds the promise of solving hundreds of crimes throughout the state.

There is general agreement by the examiners that the current level of training for Troopers and municipal officers at the Sitka Academy is inadequate. Presently, four hours is allotted to fingerprint related training which permits little more than teaching fingerprint patterns and taking and developing prints. In some cases only two or three hours have been available, whereas eight hours is recommended as a minimum by the section supervisor.

A major need for both state and local police agencies, plus correctional institutions, is for training to take higher quality fingerprints. Although in the past, inadequate prints on the 10 print cards were sent back to be redone so that they could be classified, this is no longer done. All prints are now filed but those that cannot be classified are so noted. This is a problem of some magnitude. Approximately one out of six prints received is unable to be classified.[8] This will be a significant problem when the Automated Fingerprint Identification System is installed in Alaska, since the ability of the computer to match the ridge characteristics requires that these aspects be clear and identifiable. The greater the input into the data base of smudged or otherwise unclear prints, the lesser the probability of matching the latent print to the file prints within the data base.

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[8]Data Compiled by Robert LaPoint, Fingerprint Section Supervisor, AST, Juneau for the year 1981.

In addition to the need for taking better prints, there is the related need for training of both state and local law enforcement officers in the handling, packaging, and shipping of items sent to the laboratory for latent print searches.

A problem expressed by some in the field is the less than total acceptance of results of fingerprints being developed on items of evidence in the laboratory. Complaints seem to arise from items being sent to the laboratory that the officers "know" have prints, but too often the results of the laboratory are "negative". To some officers that term means there was virtually nothing on the evidence, which is contrary to what they perceive to be the case. Hence the problem.

The following are recommendations pertaining to fingerprints:

8. Relocate Juneau Fingerprint Section to Anchorage Laboratory

   Since half or more of the states population is located in the Anchorage bowl area, the Anchorage laboratory would be the most logical and reasonable place for the states fingerprint section, particularly when the automated identification system is to be implemented. It is therefore recommended that the fingerprint supervisor and the Latent Examiner I, the clerical positions supporting the Juneau fingerprint section and all fingerprint records and files be moved to the crime laboratory in Anchorage. Since the dispatchers in Juneau now assisting the fingerprint section cannot be moved, it may be necessary to hire a clerk in Anchorage for this purpose. An additional advantage of this move will be to physically locate the fingerprint supervisor in the same facility with all his staff, resulting in better overall control by the supervisor and the Laboratory Director.

9. Develop Implementation Plan for Automated Fingerprint Identification System

   A further recommendation is that a plan for implementation be developed by the fingerprint section supervisor to identify the tasks to be completed with

the FY83 appropriation, the amounts of funding needed in future years and the tasks to be completed in each year until the system is complete. The implementation of the system should also include periodic information going to all potential users to keep them apprised of system progress.

10. Personnel for the Automated Fingerprint Identification System

The potential for assistance in crime investigations by being able to identify a latent print at a crime scene with prints on file to yield a suspect is obviously significant. In addition there are many latent prints on file from previous crimes that might clear up many more crimes if the latents could be identified to the inked print file.

The Automated Fingerprint Identification System (AFIS) which has been approved and funded by the 1982 legislature, holds the promise of substantially improving law enforcement in Alaska through the identification of latent prints with those on file.

Encoding of Ten-Print cards and latent prints will be required in order to make the automated system operational. These tasks will require additional personnel. Latent prints are manually encoded and require the knowledge of a Fingerprint Examiner to make accurate ridge detail determinations. Although the encoding of the 10-print cards does not require the background of a certified Examiner, the automated system would benefit most by hiring only certified personnel. To input the system data now on hand, and to input continuing data, and to generally address additional work generated by the automated system, it is recommended that two additional Fingerprint Examiners be hired.

11. Improve Quality of Fingerprints

Upon implementation of AFIS, there will be the need to improve the quality of fingerprints obtained from some of the local police departments and jail facilities. According to the supervisor of the Fingerprint Examiners, one out of six "10 print" fingerprint cards are unable to be classified. The Troopers should offer training courses in obtain quality prints.

12. Explain "Negative" Response

To attempt to build confidence in the field regarding latent prints on items of evidence submitted to the laboratory, it is recommended that the present

terminology of "NEGATIVE RESULTS" be explained somewhere on the standard response format, as not necessarily meaning "nothing", but rather that it could mean that a print was developed but lacked the number of identifying points needed for use in court; that a print was obtained, but too smudged to be of value or whatever. It is expected that increased training efforts, as explained elsewhere, and better rapport between the laboratory and the field will also ameliorate this problem.

13. Upgrade Academy Fingerprint Training

Fingerprint personnel in the laboratory consider the various training courses at the Sitka Academy to be inadequate. The time for fingerprint training should be increased to the minimum required time of eight hours rather than the four hours or less as is the case now and include a mock crime scene for developing latent prints. This will also permit greater time for individual instruction. The Anchorage police department currently devotes six hours to fingerprint training at their academy.

D. Photography

At present, the Photography Section of the Crime Laboratory is a one-man operation. The photographer performs forensic related tasks as well as substantial non-laboratory related tasks.

As the result of his many duties the photographer can do little more than receive and record information pertaining to film received from the field, (which is picked up twice weekly for developing by a local fast-photography service) return the film to the field after commercial development, inventory and order supplies, respond to crime scenes upon request, and mix and replace photography chemicals daily that he uses for custom printing, (photographs larger than 3" x 5"). Regular 3" x 5" photographs are printed commercially by the same photography firm. It is estimated that he handles some 1500 to 2000 rolls of film each year. Commercial processing cost $2.50 per roll for developing.

Turnaround time to receive developed film in the field varies from three to seven days plus mailing, reflecting the twice weekly pickup by the commercial firm, and whether or not the photographer is away from the laboratory which may cause further delay in return of the film.

The lab does not process all film used by the State Troopers. Detachments and Posts often utilize local photography shops for processing film, and in many cases this is to their advantage. A commercial 24 hour service available in the larger urban areas is a more expeditious way to process film than to send it by mail to the laboratory, which under the best of circumstances, will almost always require a minimum of 24 hours by mail each way. In addition a local shop is preferable if negatives must be reviewed prior to enlargement, rather than sending film to the laboratory for developing, then returning it for review, then sending back to the laboratory for the enlargements, and then finally the lab sending them back to the officer. In other circumstances, however, such as at remote bush outposts, it may be most expeditious for the laboratory to process their film.

Unfortunately the total number of rolls of film used annually by law enforcement in Alaska is not available to determine whether the expense of commercially processing the film would justify a large processing operation within the Laboratory, which might also reduce existing turnaround time to receive processed film.

When the photographer is in the field, on vacation, or otherwise not in the Laboratory, a clerk receives and disperses the film, but no custom printing is done, and even then, delays may occur in shipping and receiving film.

Specialized forensic photography includes on-scene highway accidents, additional crime scene photography, autopsies, surveillance photography, rape victims, arson scenes, and evidence photography such as shoe, boot, and tire impressions, microphotography involving fingerprints, questioned documents and other evidence of a comparative nature. Techniques utilized include close-up photography, special lighting techniques, various films and filters, ultraviolet and infrared photography.

The Laboratory Photographer indicates the need for training of law enforcement officers in the field of crime photography, citing photographs from the field that are inadequate for courtroom presentation.

One section of the laboratory, nominally under administrative responsibility, deals with the receipt and filing of a copy of all Drivers Licenses issued in the state, copies of state identification cards and copies of offender photographs, ("mug shots") from the jails of all persons who have been booked. These three sources serve as a photo-photograph pool from which law enforcement agencies in Alaska, both state and local, and other states, may obtain a copy of the latest photograph of an individual, or obtain copies of mug shots for use in a line-up.

A copy of the Operators License and ID cards are forwarded to the laboratory from the Division of Motor Vehicles when individuals apply for these cards.

A copy of offender photographs from local and state jails are supposed to be sent to the laboratory. However the laboratory receives photographs from only certain state institutions. Other state institutions apparently send their photographs to Records & Identification Section in

Juneau, where they are filed in the offender files. Still other jails apparently do not send pictures they take anywhere, and some of them may not be taking pictures at all.

Drivers licenses expire five years after issuance at which time a new license must be obtained. Their expired licenses at the laboratory are then destroyed. The state ID cards have no expiration, and may be renewed at any time by the individual. The mug shots, of course, have no expiration. They are extremely important since they may represent the only picture of persons who have no driver's license or ID card, which is quite common in bush areas.

Photographs for line-up purposes are made by copying pictures from outdated drivers licenses that have been grouped together by such identifiers as age, race, sex, beard, mustache, glasses, etc. Copies are made by Polaroid camera for about $1.00 per copy. The homogeneous groupings and copying procedures are both performed manually.

Two clerks now attempt to manually file some 11,000 mug shots alphabetically by name; almost 130,000 copies of drivers license cards by license number, and some 17,000 copies of identification cards by name per year.[9] In addition, they attempt to respond to requests by law enforcement agencies for copies of some 12,000 ID card photographs, about 18,000 drivers license photographs, and approximately 750 requests per year for four or five similar appearing individuals for line-up purposes.

These tasks, plus the accompanying clerical and administrative requirements combine to exceed the ability of the two clerks to manually file the incoming drivers license cards identification cards and mug shots in a timely manner. As

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[9] Division of Motor Vehicles Annual Report 1981.

of mid May 1982, the two clerks were about eight weeks behind in filing the operators and ID cards, which translates into about 24,000 cards. Filing of the mug shots from the jails has progressed to filing those received in late 1980.

As a result, when requests are received from local, state and federal law enforcement agencies and police agencies from "Outside", for the latest picture of an individual, the laboratory has to reply that "there is no information on file" if his license or ID card, or photograph has not yet been filed or if he was photographed by jails not now forwarding their photos to the laboratory.

By any reckoning, law enforcement is not being well served.

RECOMMENDATIONS:

14. Hire Photograph Technician

The present situation of the Photographer spending a substantial part of his time in non-forensic related duties and consequently the very limited services he has time to perform for investigations can best be met by the hiring of a Photography Technician. A two man operation will enable the present Photographer to devote almost all of his time to forensic photography while the technician can handle the routine daily tasks in the laboratory and most of the non-laboratory activities.

15. Field Locations Determine Film Processing

The objective of the photography section, and indeed the entire laboratory, is to be a service oriented unit. However, this should not preclude the use of comparably priced local services in the private sector if such use is to the advantage of the individual officer involved. Thus field locations should continue to use commercial photography services, if available, providing it is advantageous to do so, rather than some policy being developed whereby everyone must use the laboratory for photography services solely for the sake of uniformity. It is therefore recommended that for routine film processing, field locations determine for themselves whether to use the laboratory or a commercial service.

16. Develop Feasibility Data for Automated Processing

Cost data should be developed by the laboratory whereby it would be possible to ascertain if an automated film processor, such as a Kodak Continuous Print Processor could be justified by the existing level of processing done by a commercial firm through the laboratory, or the projected level of future processing requirements of both State and local law enforcement. In addition to cost justification, the value of reduced turnaround time to the investigator must be considered which would likely be reduced to hours rather than days as is now the case. Also, with automated equipment, the photography personnel could obviously devote more time to both forensic and non-forensic photography, than is possible to do with the existing manual operation. In addition, a large part of the record keeping associated with the present system would be eliminated. The automated capability may also mean that a two man operation would be adequate for years to come.

17. Automate Operators License Photograph Section

Tests by Kodak confirm that it is possible to obtain a good quality photograph from a microfilmed copy of the drivers license, ID card and mug photographs, then enlarging it and obtaining hard copy by a viewer printer.[10] It is therefore recommended that the present labor-intensive procedures be abandoned in favor of microfilmed copies of the pictures coupled with a computer aided retrieval system. To utilize a modern system for this function, it will be necessary to:

a. Purchase a Kodak Planetary camera ($8700.00), accessories ($350.00), and an additional viewer/printer ($16,000), if the Photography Laboratory cannot use the same viewer/printer as is being installed in the White Collar Crime Unit.

b. Determine data entry information as is required for photograph retrieval, and the identifiers needed to obtain pictures for line-up purposes.

c. Establish 24 hour response time or less for mailing back the copy of the microfilmed picture to the inquiring law enforcement agency, an entirely reasonable goal, according to persons experienced in the microfilming process.

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[10]Testing program by Mike Penniston, Kodak rep., Anchorage, May 14, 1982.

d. Contact all law enforcement agencies in state to apprise them of the new service.

e. Contact the Division of Corrections and request all state correctional institutions send a copy of all mug shots at least weekly, which is the frequency that drivers license cards are forwarded from bush offices to DMV in Anchorage. In this way photographs issued from DMV locations and from jails in bush locations would be available for microfilming by the envisioned system within 10 days. The system would then never be more than 10 days from being current. Anchorage issued drivers license cards are available daily for entry into the system.

f. Contact R & I in Juneau to request that any pictures now being sent to them from jails be sent to Anchorage for microfilming.

g. Develop procedures to assure receipt of mug shots from the local jails, of which fifteen are on contract with the Department, and make receipt of the photographs a part of the jail contract the Department of Public Safety signs with the local community. The pictures should then be forwarded to the laboratory on a periodic basis in accordance with the procedures.

h. Since the drivers licenses expire in five years, and are the most numerous by far of the photographs to be microfilmed, it is recommended that only the existing backlog of drivers licenses and each day's receipt of new drivers licenses be microfilmed. Then at the end of five years all cards now on file can be destroyed, (other than those retained for line-up purposes). Thus a dual system of manual and automated retrieval would exist for five years relative to drivers licenses although each passing year would see a greater proportion of licenses in the automated system.

i. Since the ID cards and mug shots do not expire, it would be necessary to microfilm all of them "up-front". To do this, as well as microfilm the backlog of drivers licenses will require substantial effort to get the system operational. It is recommended that this work be contracted out to a local microfilming firm, to assure speed and archieval quality.

j. Coordinate this proposed system with the White Collar Crime unit to determine whether the equipment for both operations can be located together, and if so where, priority involving equipment to be used in common, and which unit would be nominally in charge of the two existing clerical positions in the laboratory, and how they might best be used to meet the best interests of both units.

k. However the foregoing in item "J" is decided, it is recommended that the two clerical positions be trained on-the-job with the Division of Motor Vehicles in the skills of microfilming and computer assisted retrieval. In addition both positions should be reclassified as a Microfilm Operator Trainee at Range 8, with later advancement to Microfilm Operator I, Range 10.

l. Since the microfilming section is more closely related to the photography section than administration, it is recommended that the Microfilm Operator(s) if they remain assigned to the laboratory, be included within the functional responsibility of the Photographer.

Conversion from the existing manual system to automated system, while initially requiring equipment purchases and data base development will also result in additional photographic capabilities as represented by the new planetary cameras and will assure law enforcement throughout the state, at all levels, of dependable and timely service, and interface with and permit common usage of equipment by the White Collar Crime Unit.

E. Management Policies

There are numerous laboratory related problems that can best be described as pertaining to the lack of continuity of management, due to rapid turnover of Laboratory Directors, and periods of time when there is no Director, or even an Acting Director.

Problems cited by field interviews encompass a wide spectrum, from poor to non-existent internal procedures, lack of confidentiality by laboratory personnel, lack of priorities, not knowing what the laboratory does and can do, not having or knowing about the laboratory manual, poor reputation in certain skills, interpersonal conflicts with laboratory personnel, re-shipping of evidence, lack of direction and supervision, lack of continuity of management, and related concerns.

Problems cited by laboratory personnel seem to almost echo field complaints. Laboratory personnel cite everyday problems as lack of standard procedures in the laboratory, lack of direction and objectives, lack of continuity of supervision and management, periods of times with no supervison, lack of clients knowing what the laboratory does and what it can do, outdated laboratory manual, friction among personnel, exclusion from involvement in management decisions, inadequate handling of evidence by client agencies, and so on.

In addition, although not voiced by field interviews, there is the obvious need for the laboratory to continue to improve its perception by the justice system of being impartial. Simply being impartial is not enough. The laboratory, its personnel, their activities, and all they do, must also impart the perception of impartiality as well. While not an overt problem at present, the laboratory must remain vigilant and take all actions needed to assume the continuance of impartiality.

It seems clear that the hiring of an experienced, competent, professional Laboratory Director will result in the solving of many, if not all the problems noted above. Therefore a detailed description of these numerous problems seems presumptuous at this time. Specific actions to

address the numerous management problems are properly left to the discretion of the new director. However certain recommendations about broad managerial aspects are of sufficient importance to be included here because of the extent of criticism received from the field during development of this plan, and from the overview of existing laboratory operations.

18. Laboratory Director be a Full Time Experienced Civilian

The laboratory director should be a full time, experienced, technically trained and competent civilian, since having a sworn officer as director has not proven to be effective, hinders the perception of impartiality, and would not be as effective in both the management and technical aspects needed for a successful forensic's laboratory. All staff positions should likewise be civilians.

19. Director have Authority Commensurate with his Responsibility

The laboratory director should have written confirmation of independent responsibility for professional results, and the authority to assure those results, as well as the authority to try new approaches and innovations.

20. Separate Division or Accountable only to Division Director

The laboratory should be a separate division within the Department of Public Safety, or at the least, be accountable only to the Director of the Division of State Troopers. Thus positioned, the Laboratory Director will be in a better position to make decisions, arrange functional responsibilities, personnel staffing, laboratory policies, and control of laboratory budget. He should also be considered a part of the management team of the State Troopers and should attend and participate in staff meetings called by the Director.

The recommendations for greater independence and responsibilities call for commensurate laboratory policy that while all laboratory employees work for and are responsible to the civilian director, the entire laboratory function is being developed as a resource for the police officer in the field. He must have every assurance of laboratory assistance when he needs it.

21. Laboratory Director Sign Analytical Reports

The laboratory director should sign all analytical reports, along with the analyst. The latter identifies whose opinion and work is being reported on, while the director authenticates the official status of the report and that it was conducted in accordance with official laboratory procedures.

22. Ensure Maximum Use of Laboratory

A periodic "breakout" of client use of the laboratory is highly desirable to assure that forensic examinations make the maximum contribution to the criminal justice system. Several approaches could be used. One is to tabulate the number of cases each client agency submits to the laboratory. These gross figures would yield a rough idea of relative use. This data can be refined over time to obtain a ratio of the average number of lab requests to the number of sworn officers. When a given agency falls substantially below the average, the decrease could signal a problem, perhaps with the laboratory, laboratory personnel, or the need for training of new personnel within the client agency or other circumstances.

Another approach to determine relative use is to compare the average number of Part I crimes over the preceeding several years, which are available in the annual "Crime in Alaska" to the number of sworn officers and the number of requests for assistance. Since Part I crimes may be assumed to usually involve evidence susceptible of forensic examination, such comparison could indicate the extent of laboratory utilization.

Whether the foregoing methods, or another is used, it is important to establish that all police agencies are making maximum use of forensic examinations. A personal visit either by the laboratory director to agencies which appear to be under-utilizing the laboratory or a visit by the agencies themselves to the laboratory would perhaps be the best ways to resolve any problems that may have risen, as well as make arrangements for training or whatever is needed.

23. Development of Workload Data

Workload data is an essential element of management information. Data should be gathered in a standardized, on-going manner relative to the number of incoming tests, number of completed tests and the backlog, which represent the number of tests awaiting

action. Over time, trends will become apparent relative to increases or decreases of backlogged cases. From this rough data, one can make projections about when to increase staff in order to assure backlog of tests do not exceed a pre-determined percentage of total cases.

A subset of the foregoing is to develop data showing number of cases, number of items submitted and the type and number of analyses performed, by client agency, as well as laboratory totals. Among other information, increases and decreases by type of analysis will yield trends that will indicate need for additional personnel and equipment.

It may also be desirable to develop a breakout of personnel time by function, thereby revealing time spent in actual tests at the bench, courtroom testimony, crime scene assistance, training of others, training received, vacation, etc. Such data can be used for predicting staffing levels needed in the future, deciding about changes in emphasis of employee activities, and related information.

Analysis of time spent in certain types of testing compared to later use of results of tests in court will suggest priorities of work activity. For example in drug cases, the laboratory might elect to cease testing after a controlled substance is identified on any one item. Any other items of the same type substance would undergo only screening procedures for presumptive identification. Quantitative analysis would only be performed in special circumstances, and so on.

Later, as experience with a broad array of analyses is gained, it may be possible to assign an arbitrary weight to each test, based on the average amount of time for completion, and thus be able to refine measurement of output productivity of the laboratory. This can be used as a predicator of when additional space, manpower, equipment and so on will be needed. If satellite labs are established, their output versus backlog will indicate the need for temporarily shifting manpower from one laboratory to another, and related decisions.

24. Development of Response Timetable

A response timetable is desirable to measure the time elapsed from receipt of given tests until the analyses are completed; i.e. so many days for drug testing, so

many for blood alcohols, etc. These "times to completion," or turnaround time can be determined in concert with the needs of the requesting police agencies, and should be viewed as an ideal to be strived for by the laboratory. At the end of each month measurements would be made to determine how close the laboratory achieved the ideal times. Thus if in a given month, perhaps 45 of the 50 drug tests were all completed within the pre-determined time of perhaps five days, as agreed upon by police and the laboratory, then the laboratory completed 90% of the drug tests within the agreed upon time. The percentage of completions of each type of test will show which category of tests is most delinquent. Resources and priorities can be shifted accordingly.

25. Develop Statistical Data

While most of the foregoing are primarily management tools, statistical data, such as total number of tests performed, total items and analyses performed, and listing of tests by client agencies, trends and projections must also be kept for overall use at budget time, and for client agency consumption. It is recommended that an annual report be developed and commercially printed showing overall lab usage and the numerous other data elements seen desirable for distribution to police, prosecutors, the judiciary and the legislature. Further it is recommended that the laboratory forward certain data of general interest to the Office of Criminal Justice Assistance for inclusion in their annual "Crime in Alaska" publication, thus carrying the word of laboratory operations to an even wider group of consumers. Distribution of both documents will help disseminate information about the lab and its capabilities, thereby helping to increase its image throughout the criminal justice system and the legislature.

26. Standard Operating Procedures

In the long term it is recommended that the laboratory prepare written Standard Operating Procedures to the extent deemed necessary. An obvious area in which written procedures would be appropriate is in the evidence room. The high turnover of clerks there creates the situation of a new person coming in with virtually no similar experience elsewhere, little or no overlapping time with the incumbent, and simply taking over. Confusion is bound to occur, both in the evidence room and to the officers submitting evidence as they are subjected to a new person unfamiliar with the new job, and accustomed procedures.

Written procedures would provide the necessary guide for a new employee in this job. Possibly other written procedures would be appropriate elsewhere in the laboratory as well.

The foregoing paragraphs about statistics and workload data not intended to be all inclusive or to suggest that each item is needed, but to suggest some of the analyses that may be of management value. The type and extent of data and statistics developed is properly the decision of the Director.

27. Laboratory Management Philosophy

Perhaps the key to successful management of a forensics laboratory is the rapport within the laboratory and the involvement of laboratory personnel in the decisions relating to laboratory operations. Management of professional, highly skilled scientists and technicians is substantially different than management of subordinate ranks by a superior officer as exists within the State Troopers. It is recommended that the Laboratory Director adopt at the outset a participatory management philosophy to assure the fullest utilization of staff ideas, consultations, and recommendations, although making the final decisions himself. Such philosophy might include among other aspects, the use of weekly staff sessions involving all professional, technical, and clerical employees in the decisional process, adoption of an "open-door" policy by the director, a policy of keeping staff fully informed and such other actions as will ensure a feeling of value, involvement, and participation by all laboratory employees. Within this environment will be the greatest opportunity to establish work priorities, develop critical objectives, set goals and direction and generally have a dynamic and responsive forensic laboratory. In addition to being good management over the long term, such management style is suggested here primarily because it is so badly needed now and holds such great potential for the successful immediate and long term development of a full-services laboratory.

28. Clientele Feedback

Obtaining information from client agencies about the degree of satisfaction experienced in dealing with the laboratory is important for early identification of existing and potential problems of service delivery. It is recommended that some system, or feedback loop, from client agencies be established for early appraisal of laboratory services. Several means might

be employed. A survey form, or postage paid postcard could be sent to each client agency following completion of the requested laboratory services. Several questions relative to timeliness of laboratory services, quality of work, cooperation of personnel etc., could be asked, as well as a place for general observations. A letter might be sent periodically to all client agencies asking their opinion of laboratory services to date and encouraging ideas and recommendations for better service delivery. The Laboratory Director could meet with Chiefs of Police at meetings of regional chiefs organizations and at statewide meetings. Similarly he could meet with judges at their annual judicial conferences, and with District Attorney's at the periodic meetings, and so on, in an effort to set up a continuing dialogue with users of laboratory services, and thereby assure the highest possible level of forensic services.

29. Cost Policies

Since the inception of the existing laboratory, the Departments policy has been to provide laboratory services at no cost, both for work provided in-house, and for tests performed elsewhere if the evidence was first sent to the laboratory. It is recommended that the provision of services at no cost be continued.

An additional cost consideration pertains to payment of travel and per diem of AST and speciality laboratory personnel to testify in court. Presently the District Attorney's pay these costs, but this is not an established uniform policy of the Department of Law. Most District Attorneys have sufficient funding, but not in every case. A major local law enforcement agency claims the local district attorney will not proceed with drug cases that do not "plead out," because he does not have funds for travel of laboratory personnel to testify in court. As a result, this major police department says they have had virtually no use of the laboratory for the past year. This problem may exist elsewhere for some of the smaller departments. To address this problem, it is recommended that the Department of Public Safety allocate additional funds to the laboratory for travel and per diem expenses for testimony by both AST and speciality laboratory personnel. This is an additional expense item, but the policy of the FBI laboratory which pays these costs for their personnel provides powerful precedent to justify such expenditures, and such policy is in accordance with the concept of a full-services crime laboratory.

Although the potential for abuse may exist, the Director of the Laboratory can develop overall management guidelines with the Chief Criminal Prosecutor if it appears that District Attorneys are requesting laboratory personnel to travel too frequently.

30. Standardization of Field Kits

At present, there is no standardized narcotics field test kit, arson investigation kit, rape or gunshot residue kits. State Trooper Detachments apparently purchase from vendors that differ from vendors used by local police departments. The result is a lack of uniformity that causes confusion in the field, endless questions to the laboratory, difficulties for training, and ultimately complaints from the field.

While the laboratory cannot control vendor selection of local police departments, it can, with assistance from major crimes investigators, laboratory personnel, and the Fire Marshals Office survey the available field kits on the market and decide which ones appear to be the best, and why. This information should become policy of the Department, and be sent to all other client agencies including local fire departments, as the recommended items for them to purchase, along with a summary of the advantages of standardizing field kits throughout the state.

31. Evaluation of Drug Testing Kits

The head chemist in the laboratory has already evaluated the drug testing kits and has found the ones most widely used to be generally unreliable. According to him, even experienced investigators are unaware of the false positive reactions which could be encountered. It is therefore further recommended that the laboratory prepare information concerning these tests for both the Troopers and local law enforcement agencies, leading to the recommended adoption of only the most reliable kits by the Troopers, with the same suggestion for local units of law enforcement.

32. Updating Laboratory Plan

It is recommended that additions and deletions to this plan be made as circumstances change, to show the accomplishments of certain objectives, changes in emphasis and priority and to provide long term budgeting forecasts, and rational.

F. Upgrading Personnel

At present (June 1982), the existing AST laboratory is staffed by three chemists, a photographer, two latent fingerprint examiners, two additional latent print examiners including the Section Supervisor in Juneau, an Evidence Custodian, two clerks and a clerk typist. The position of Laboratory Director has been unfilled for several months, and there has been no interim director.

With the exception of the Lab Director, who has always been a commissioned State Trooper, the balance of the laboratory positions have always been filled by civilian personnel.

Assigning a commissioned position to manage a forensic science laboratory has several disadvantages. Directing the laboratory is one of the many possible assignments available to a Lieutenant and above as the organization broadens and expands the background and experience of the personnel who will one day be in top managerial positions. While a brief stint in the laboratory helps accomplish this purpose, it poses several impediments to a laboratory that wants to expand its services and level of expertise. While the degree of personal interest and effectiveness among commissioned directors has varied, it is undeniably true that to date, none of the commissioned directors has previously managed a forensics lab, has a forensic background, a degree in one of the natural sciences, or has ever supervised civilian laboratory personnel. In addition, he has not been able to make policy decisions for the laboratory, since he must go through several higher levels of the organization. Moreover, commissioned directors have been assigned other additional duties that further dilutes their effectiveness. The last director spent a[illegible] half his time in other non-laboratory related tasks. Finally, with frequent changing of directors, there

is little opportunity for developing long-term objectives, setting priorities, hiring well-qualified personnel, or realizing the advantages of continuity of direction.

The present situation of having no one as full time director, and not having named anyone as acting director in the interim, has not improved morale among laboratory personnel who feel that their function is important enough to warrant someone being named in charge so that the daily problems and questions of both a technical and management nature can be addressed, and efficiency of their function maintained.

Salary for staff personnel in the laboratory can only be described as low. Virtually all laboratory personnel have an entry level salary that is less than a trooper recruit with no training. The chemists all have a required four year college degree in an appropriate scientific field. Similarly the Latent Print Examiners and the Photographer have completed technical training and are at the journeyman level before being hired. By comparison, a Trooper recruit needs only a GED which is less than a high school diploma, and typically has no experience in law enforcement.

Three of the four Latent Print Examiner I positions are at an entry level pay range 15, or $27,540.00 per year. The supervisor is paid a range 17, or $31,668.00 per year. By comparison, the fingerprint examiner at the Anchorage Police Department is paid $36,650.00 a year. His salary is the same as a Patrol Officer. Although the laboratory does not presently have a Questioned Documents Examiner, the Anchorage Police Department's Questioned Documents Examiner receives $34,392.00.

One common method of attempting to set equitable salaries for persons in state service in Alaska is to review the

salaries paid in private industry. An exact comparison doesn't exist, since there are no other forensic chemists in Alaska. However, there are numerous chemists in Alaska employed in the oil industry. Although the results of their tests do not have the potential of resulting in freedom or imprisonment of an individual, they receive a salary of $40,000.00 - $48,000.00 which is substantially more than is received by the Chemists in the crime lab, whose salary ranges from $29,556 to $38,988.

Within the support personnel the Evidence Room Custodian is classified as a Clerk IV, pay range nine, with an annual salary of $18,936, compared to the $26,720 received by the Evidence Specialist at the Anchorage Police Department. According to the position description, this clerk "implements office procedures, orders supplies, provides for training, prepares complex reports and acts as a source person for information that requires considerable interpretation, and explains policies." Skills required are "proper English useage, composition, and modern office practices", among others.

By comparison, the Evidence Room Custodian is responsible for the receipt and safekeeping of about one quarter of a million dollars in cash, some two million dollars worth of illicit drugs, thousands of dollars worth of guns, coins, jewels, electronic equipment and other items too numerous to list. He also receives, stores, maintains, and ships items of evidence. Of even greater importance is the responsibility to ensure an unbroken chain of custody of each item, the immediate retrieval of items of evidence, and a records system that assures nothing is misplaced, lost, or stolen. Failure to function successfully can mean an accused murderer or drug dealer will be set free. This very thing has happened in the past as the result of evidence being lost.

It seems clear that the functions of the Evidence Room Custodian are not well reflected in the existing clerical position description, and that a pay range nine is inadequate for the responsibilities involved. The incumbent can perhaps afford to receive this low rate of pay because he also receives retirement from a former employer. The skills of the next custodian may more nearly approximate the low rate of pay being offered.

Additional inappropriate job descriptions also apply to the forensic chemists. The chemist series does not adequately describe the forensic functions now being performed, nor would additional chemist positions be suitable for other skills in the area of criminalistics being contemplated for the future. Moreover, the wide range of background in criminalistics needed by applicants for future positions is not contained within the existing chemist job descriptions, nor does a chemist testify in Court. In short, the existing chemist classification is not appropriate to a forensics laboratory.

In addition to demonstratably low salaries, the laboratory staff personnel have substantial difficulty advancing to higher job classifications, since either a position vacancy must exist, or their existing position must be reclassified. In short, there is no career path. In a large organization such as the State Troopers, the large number of officer and field grade positions means substantial chance for advancement as personnel retire and resign. A vacancy near the top may mean that perhaps five or six openings occur as individuals move up to fill the vacancies above them created by the people who moved up to fill still higher level positions. Within the existing chemist and fingerprint job positions, the only way to advance to a higher level position is through a reclassification of the incumbent's present position, or to fill a higher level

position that becomes vacant. A position reclassification takes considerable time and effort and requires written justification, a rewritten job description, review by departmental personnel and final concurrence by the Department of Administration. The process may take six months or longer, and then there is no assurance that the reclassification will be granted.

The only other way to advance is for a vacancy to occur in a higher level position. Since there is only one higher level chemist, and one higher level Latent Print Examiner, vacancies in those positions require that the supervisor either dies, retires, or terminates. Even then, only one of the lower level individuals can advance. The others are still stuck where they are. That this situation is true is well illustrated by the Latent Print Examiners. One Examiner has been at a Range 15 for seven years. Another has been a Range 17 for nine years. Thus it appears that the only existing way for any kind of "career ladder" to be available is through the termination, in one way or another, of a supervisor, which is in itself directly in opposition to the goal of long-term retention of qualified forensic personnel. In a very real sense the existing structure of job classifications acts to block one of the goals of a professional organization. The combination of low salary and lack of a professional career path and consequent stagnation in grade has predictably resulted in short tenure for the professional laboratory employees. (The tenure of the commissioned directors has also been short, although for different reasons.) Although one chemist, the photographer, and two of the Latent Print Examiners have been employed since the laboratory began in 1978, other personnel have been employed and then terminated after only short periods of time. One chemist stayed for a year, another for nine months, and a third for four months. Of the present chemists, one has been employed for a year, a second for eight months. The

present Evidence Custodian with 15 months on the job has been employed the longest, since there were three prior custodians in as many years. There have been two other photographers and two other fingerprint personnel. There have been three directors since 1978, and the position is open again, and remains unfilled. The rapid turnover of commissioned troopers as Directors further contributes to the lack of continuity and effort, although the reasons for turnover are not for reasons of low salary and lack of career path, but rather reflect their upward mobility into higher ranks of management.

Other results of frequent turnover of professional personnel are that new employees must develop their forensic skills by experience, which is not available in colleges, in order to be accepted as expert witnesses in court. The development of forensic skills can only be learned by on-the-job experience, since there is no other forensic laboratory facility in the state from which to obtain experienced laboratory analysts. In addition, employees with no forensic background will not have experience in how to testify in court. Finally, the forensics arena has its own unique requirements. A graduate chemist, for example, coming to a laboratory to fill a criminalist position as a serologist does not know the tests and equipment utilized by the forensic serologist and will need further training to undertake the functions of a serologist. Any forensic-related skill must also include training in evidence handling and evidence custody and in writing laboratory reports that meet the requirements of the prosecutor and judge. By any measure, the loss of an experienced, capable criminalist in a crime laboratory has significant and long-term implications. Constant turnover of personnel means the laboratory never really progresses beyond a certain point, for it is continually obliged to stop and begin over again to meet the results of hiring inexperienced personnel.

RECOMMENDATIONS:

33. Professional Director

It is recommended that the position of Director of the Crime Laboratory be filled by an experienced criminalist and previous Laboratory Director or someone with proven administrative, fiscal and planning talents. The individual should be hired as a full-time civilian director, and have no unrelated responsibilities.

The advantages of an experienced or otherwise qualified Laboratory Director includes possible past experience on the bench, the more effective management of professional civilian staff, the knowledge of what constitutes a qualified applicant, the knowledge born of experience of how to solve common laboratory problems, knowing how to evaluate the effectiveness of laboratory services, the continuity of direction, and the setting and meeting of long term goals.

34. Name Acting Director

Until the hiring of a full-time professional Lab Director occurs, it is recommmended that someone be named as Acting Director in order that day to day operational decisions can be made. Many of the recommendations in this plan need not wait until a new Director is hired, but rather can begin to be implemented immediately. Moreover an Acting Director can give an immediate sense of direction, continuity, and routine decisions that the laboratory does not now have, and thus significantly improve laboratory morale.

35. Reclassify Existing Professional Positions and Upgrade Salaries

It is recommended that the existing professional positions - that is the Chemist, Latent Print Examiner, and the Photographer positions be deleted and replaced by two broad job descriptions entitled "Criminalist" and "Forensic Specialist." Within each of these broad job descriptions there should be subsets, relating to the several specialty disciplines either now existing in the laboratory or that may be needed in the future. The Criminalist Class would include all the existing and future criminalist positions, such as Forensic Chemist, Serologist, Toxicologist and related positions, generally characterized by extensive formal education requirements. The "Forensic Specialist" class would include all the existing and future positions such as Latent Fingerprint

Fingerprint Examiner, Photographer, Questioned Documents Examiner and related positions, generally characterized by not requiring extensive formal education.

By adopting this reclassification scheme, the Personnel System is spared the increasing prolification of new, very narrow job descriptions as the laboratory seeks to hire additional individuals for very specific fields found only in Alaska's Crime Laboratory. Moreover, the broad reclassification scheme would enable the laboratory to hire the expertise it requires without experiencing the delay and trauma attendant to obtaining a new job classification everytime a new skill is needed in the laboratory.

In addition it is further recommended that both job descriptions contain seven levels, beginning at a trainee level, entry level, through a technician, journeyman, section head, deputy laboratory director, culminating at the top with Laboratory Director position. By adopting a seven-level system within both classes, there is a provision for upward mobility for each employee as he attains the experience, education, and other requirements for each level. Such opportunity for career development does not now exist. The chart on the next page illustrates the recommended reclassification of laboratory job descriptions, as well as salary recommendations discussed in the following pages.

Closely related to the recommendation to adopt a new class specification is the issue of salaries of laboratory personnel.

The present low salaries of laboratory personnel should be increased to reflect the often crucial role the outcome of their tests have in criminal proceedings; address the problem of short term tenure now being experienced as the direct result of low salary; and to recognize the formal education and professional standing required before eligible for hire.

Comparison of the salaries paid laboratory personnel in several other states is not particulary useful since it is not known if the salaries in those states are nigh or low in comparison to the remaining states. In addition, the latest salary surveys proved to be dated. A more fruitful approach has been to determine salaries paid to chemists in the private sector in Anchorage, salaries paid by the Anchorage Police Department to their three personnel who perform

JOB DESCRIPTIONS

ALASKA STATE TROOPERS CRIME LAB

JOB TITLE	FORMAL EDUCATION	EXPERIENCE	SUBSTITUTIONS	OTHER REQUIREMENTS	SALARY RANGES	COMMISSIONED EQUIVALENCY
Criminalist 7 or Forensic Specialist 7 (Laboratory Director)	BS or BA in Criminalistics, Chemistry or Biochemistry or related physical or natural science. Advanced degree preferred or MPA or MBA degree.	8 years experience in a forensic science lab in Alaska or comparable experience elsewhere, including two years in supervisory capacity or five years experience as Director of a regional or state crime lab.	An advanced degree in an applicable field may be substituted for one year of required experience.	Qualifications as an Expert Witness and active membership in related Professional Society or Association.	23	Major
Criminalist 6 or Forensic Specialist 6 (Deputy Director)	BS, BA in Criminalistics, Chemistry, Biochemistry or closely related natural or physical science. Advanced degree preferred.	7 years experience in forensic science lab with demonstrated expertise in Criminalistics, two years of which has been supervisory experience of a technical section.	An advanced degree in Chemistry or a related field may be substituted for one year of experience. A four year degree in a related field may be substituted for two years of experience.	Qualifications as an Expert Witness and active membership in related Professional Society or Association.	21	Lt.
Criminalist 5 (Section Head)	BS or BA in Criminalistics, Chemistry, Biochemistry or closely related natural or physical science.	5 years in forensic science lab, with demonstrated experience and expertise in Criminalistics.	An advanced degree in Chemistry or a related field may be substituted for one year of experience.	Qualifications as an Expert Witness and active membership in related Professional Society or Association.	20	1st Sgt.
Forensic Specialist 5 (Section Head)	High School Diploma plus successful completion of FBI 80 hour course in fingerprint identification or equivalent. 2-4 year degree preferred.	7 years experience as Forensic Specialist in Alaska or comparable experience elsewhere.	A two year degree in a related field may be substituted for one year of experience.	Qualifications as an Expert Witness and active membership in related Professional Society or Association.	20	1st Sgt.
Criminalist 4 (Journeyman)	BS or BA in Criminalistics, Chemistry, Biochemistry or closely related natural or physical science.	3 years in a laboratory with demonstrated experience and expertise in appropriate field of criminalistics.	An advanced degree in Chemistry or related field may be substituted for one year of experience.	Qualifications as an Expert Witness and active membership in related Professional Society or Association.	19	Sergeant
Forensic Specialist 4 (Journeyman)	High School Diploma plus successful completion of FBI 80 hour training in fingerprint identification or equivalent elsewhere.	5 years experience as Forensic Specialist in Alaska or comparable experience elsewhere.	None	Qualifications as an Expert Witness and active membership in related Professional Society or Association.	19	Sergeant

JOB TITLE	FORMAL EDUCATION	EXPERIENCE	SUBSTITUTIONS	OTHER REQUIREMENTS	SALARY RANGES	COMMISSIONED EQUIVALENCY
Criminalist 3 (Technician)	BS or BA in Criminalistics, Chemistry, Biochemistry or closely related natural or physical science.	1 year professional lab experience at level of Criminalist 2 with Alaska or other relevant job experience to the specific area of expertise.	An advanced degree in appropriate graduate experience may be substituted for one year experience.	None	17	Trooper
Forensic Specialist 3	High School Graduate	3 years as Forensic Specialist in Alaska or comparable experience elsewhere.	None	None	17	Trooper
Criminalist 2 (Entry level)	BS or BA in Criminalistics, Chemistry, Biochemistry or closel, related natural or physica science.	None	None	None	15	Rookie
Forensic Specialist 2 (Entry level)	High School Graduate	1 year experience as Forensic Specialist in Alaska or comparable experience elsewhere.	None	None	15	Rookie
Criminalist 1 (Trainee)	2 year degree in Chemistry, Biochemistry or related science; or 60 semester hours within a course of study leading to related degree.	None	None	None	13	Less than a Rookie
Forensic Specialist 1 (Trainee)	High School Graduate	None	None	None	13	Less than a Rookie

laboratory related functions, and to equate existing salaries of laboratory personnel in one of the outstanding laboratories nationwide to the salaries of their commissioned officers. The following is a recap of these results:

A. The Tesoro Refinery on the Kenai employs chemists in the following jobs.[11]

1.	Lab Technician	non degreed	- $38,278
2.	Chemical Engineer	degreed	- $40,800
3.	Chemistry Lab Supervisor	degreed	- $55,200

B. A University of Alaska Chemistry major who had not completed his degree was employed by another refinery for $48,000.00 per year, in 1982.[12]

C. Nationally, the medium salary of chemists (that is, the salary which is exceeded by 50% of the chemists participating in the survey) employed by the petroleum industry in 1981 was $40,000.00.[13] This is a national figure involving median salaries of all the states, rather than an Alaska median which would be higher.

D. The Anchorage Police Department pays their personnel who perform lab-related functions the following annual salaries.[14]

1. Identification Technician - $35,650/year - same as Patrol Officer.
2. Identification Specialist - $41,900/year - same as Sergeant and Investigator.
3. Assistant ID Specialist - $23,670/year - same as Police Cadet.

E. The Dade Co. Florida, Crime Laboratory provided the following salary comparison with their Crime Laboratory personnel and their Commisioned police officers:

1. Criminalist I is approximately equivalent to a Corporal.
2. Criminalist II is approximately equivalent to a Sergeant.

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[11]Telephone conversation with Tesoro Petroleum, Anchorage, Alaska, June 4, 1982.
[12]University of Alaska, Chemistry Department.
[13]Chemical and Engineering News, June 22, 1981.
[14]Telephone conversation with Anchorage Police Department June 3, 1982.

3. Criminalist III is approximately equivalent to a Lieutenant.
4. Criminalist IV (not applicable in Dade Co.)
5. Criminalist V (Lab Director) is approximately equivalent to a Major.
6. Fingerprint Technician I is slightly below a police officer.
7. Fingerprint Technician II is approximately equivalent to a Corporal.
8. Fingerprint Supervisor is approximately equivalent to a First Sergeant.
9. Photographer is the same as a Fingerprint Technician I is slightly less than a police officer.
10. Police Property Custodian is slightly less than a Police Officer.

F. The Oregon State Police Crime Laboratory in Portland provided the following comparative salary information:

1. Criminalist I - Entry Level - equivalent to Patrolman.
2. Criminalist II - Trainee - equivalent to Corporal.
3. Criminalist III - Journeyman - equivalent to a Sergeant.
4. Criminalist IV - Supervisor - equivalent to First Sergeant.
5. Regional Laboratory Director - equivalent to Lieutenant.
6. Statewide Laboratory Director - equivalent to Captain.

In view of the foregoing, it is recommended that the proposed Criminalist and Forensic Specialist positions described earlier be equivalent to the salaries received by the following commissioned personnel:

Laboratory Positions	Commissioned Equivalency	Pay Range
Level Seven (Director)	Major	Range 23
Level Six (Deputy Director)	Lieutenant	Range 21
Level Five (Section Head)	First Sergeant	Range 20
Level Four(Journeyman)	Sergeant	Range 19
Level Three (Technician)	Trooper	Range 17
Level Two (Entry)	Trooper Recruit	Range 15
Level One (Trainee)	(No comp. Position)	Range 13

The foregoing chart portrays all the recommendations relative to position reclassifications, the seven levels within the proposed two new broad job

descriptions, salary equivalencies of lab personnel to commissioned officers, and the recommended State of Alaska pay ranges. In addition, job prerequisites in terms of formal education, experience and other qualifications are also presented.

The intent of this chart is to portray a concept of simplified job descriptions for the lab, the upward mobility possible with seven levels of proficiency, training and education, the improvement of salary levels to some reasonable figures, and the formal job requirements of each level of proficiency. It is expected that the prerequisites for each level may be changed, depending upon the best judgment of the new, professional Lab Director.

36. Reclassify Existing Clerk IV

It is recommended that the existing Clerk IV position for the Evidence Room Custodian be changed to a Storekeeper, which more nearly reflects the actual work performed by the Evidence Room Custodian. A Storekeeper, by the Personnel System definition "orders, receives, maintains, stores, issues and ships supplies, materials and equipment, and accounts for supplies issued and received." The position has to function independently since there is only one Evidence Room Custodian in what is the only crime lab in the state. Therefore, the proposed storekeeper position should reflect this fact, and not be a low level storekeeper who functions "under close supervision." Since the end result of professional criminal investigation is often a criminal court proceeding in which every possible avenue of defense is explored, it is foolheartedly to oefense is explored, it is foolheartedly to weaken the entire case and risk the possibility of many manhours of investigation, stakeout, and preparation being negated because an underclassed, underpaid employee could not locate a vital piece of evidence or is impeached upon the witness stand.

The existing photographer position, the proposed microfilm positions described with the photography section, and clerical position are not recommended for reclassification. None of the positions are unique to

state service, whereas undeniably the criminalist and identification specialist are unique, simply because there is only one crime lab within state service. There are numerous other state agencies have photographers, microfilmers and clerical personnel. Any attempt here to alter these existing positions, however desirable for the lab, would impact other persons in those same jobs elsewhere in the state government, and this would not likely be accepted by the Division of Personnel.

37. Develop Educational Incentive:

It is further recommended that a salary differential, based solely upon completion of academic requirements be developed, so that even if an individual cannot advance to a higher level position, he can at least advance in salary beyond the normal increases now available based upon tenure. Such a system might offer a five percent salary increase for completion of 15 semester hours of applicable academic coursework in the Upper Division and/or beyond the Bachelors level, and another five percent for completion of a Masters Degree, or a required minimum number of semester hours of undergraduate and graduate class work.

A similar approach could apply to the Technician positions that do not now require an academic degree. A 5% differential could be awarded for completion of a two year degree in a criminal justice program, with another 5% for either a combination of additional lower division course work and upper division course work, or the completion of a Bachelors Degree, or perhaps completion of formal training courses elsewhere.

Actual details of such a program would have to be developed in consonance with course offerings at the University. Part of the recommendation also involves reimbursement of tuition and related expenses to the employee upon his successful completion of each course.

This recommendation is nothing new to law enforcement agencies. The Anchorage Police Department has had a salary differential for academic achievement for more than ten years. More than a third of their sworn personnel now have either a two year or a four year degree. According to the Anchorage Police Department this program has had the effect of reducing employee turnover through an increase in professonalism and self-improvement.

G. Crime Scene Processing, Evidence Handling, Storage, and Disposition

A major problem voiced by local departments, some AST personnel, some district attorneys and judges, is the lack of consistent, skilled, professional handling of crime scenes. The reason for this problem is the lack of adequate numbers of well-trained and experienced personnel at both the state and local levels to respond to and process crime scenes.

On occasion, laboratory personnel are called to a scene to gather evidence and generally handle crime scene responsibilities. However, lacking the experience and training of an investigator, the technicians must essentially be told what to do at the scene of a crime by an investigator. The trained investigator surveys the crime scene and all items that appear to be evidence and tries to form an opinion as to what happened, the sequence of events as they happened, and the probable participants who had to be involved. Having formed a mental image of what likely occurred and how, the investigator is in a much better position to begin checking for evidence, both visible and invisible. If his idea of what happened is incomplete, or if the evidence doesn't verify his idea of what happened, he will change his opinion of what occurred. Perhaps certain evidence, insignificant in itself, is the key to filling in certain aspects of the investigators opinion of what happened. That in turn may suggest another avenue of inquiry that appears fruitful.

The laboratory technician, however, is at a distinct disadvantage at the crime scene. His expertise and experience is in the actual performance of certain tests in the laboratory. Not being trained as an investigator, he does

not think the same way as the investigator. Evidence that may appear to be inconsequential to him may be quite important to the investigator. What may appear important to photograph in the view of the investigator may not be recognized as important by the photographer.

Laboratory personnel themselves question their value at a crime scene. They acknowledge their lack of investigative expertise. They consider their biggest contribution to be made in the laboratory, performing the tests and analyses that they have been prepared academically and by experience, to do.

When laboratory personnel are called out to the scene, they are unsure of what support items other investigative agencies have. On one occasion, the laboratory and two other agencies were involved in a crime scene that included several bodies. None of the three agencies brought body bags. Each thought another would have them.

Calling laboratory personnel to the scene also reduces the output of tests they perform. One recent case resulted in three laboratory people being called out of town to a crime scene.

Although one tends to think of the need for crime scene expertise as relates to major crimes, the need extends beyond that to also include expertise in vehicle accident scene analysis, suspected arson fires, and a whole host of lesser crimes which are perceived to be quite important, particularly by the smaller local departments which experience relatively few major crimes. A crucial aspect of a hit and run automobile accident may be whether one car's headlights were on or not. Analysis of the headlamp filament may provide the answer. Paint transfers and

fibers from the victim's clothing and his hair may be important in identifying the hit and run car. The determination of the presence of accelerants may point to an arson fire. In every case, the collection of uncomtaminated evidence is needed for anaylsis and further investigation. The usefulness of a crime laboratory, however sophisticated it might be, is dependent upon receipt of physical evidence in an unchanged condition.

Several approaches to the overall problem of recognizing, gathering and transporting evidence to a crime laboratory seem possible:

(a) Theoretically, laboratory analysts with police investigator backgrounds could be hired. However, it's unlikely that an academically qualified analyst could be found who also happens to be an accomplished investigator. The reverse seems equally true.

(b) Laboratory specialists could be trained as an investigator. While some degree of cross training in both disciplines appears desirable so each has an appreciation of the problems of the other, it is unlikely a person can be a well-trained investigator and an academically qualified laboratory analyst and keep current in both fields.

(c) Assuming that in Alaska at least, the two professions can best complement each other by working closely together, but by remaining essentially separate, the only other approach seems to be someone or group of persons who can bridge the gap between the professional investigator and the laboratory specialist. Signifi-

cantly both the investigators and the laboratory personnel suggested essentially the same idea - Evidence Technicians in the words of the laboratory people, and a Crime Scene Team in the words of the investigators. This team, to be comprised of experienced investigators, for reasons already noted, would need to be sensitive to the needs of both the investigators and the analysts in the laboratory, perform tasks on behalf of both, and take other actions deemed appropriate to fill the need for a more professional handling of the crime and accident scene.

If such a team is to be developed, there are several questions that arise as to the composition of such a team and how it can be organized to be of optional value to law enforcement in Alaska.

Field interviews revealed almost 100% agreement with the idea of a Crime Scene Team, but ideas differed as to its structure. While many troopers and some local departments think a highly specialized, centralized Crime Scene Team should be developed that could respond to requests for assistance virtually anywhere in the state, others thought that a single team would not be available when needed because of weather, court appearances and other commitments. Then to, there is the matter of pride of organization and the desire of the smaller police agencies to increasingly be able to handle their own affairs and not to rely on the troopers.

Other authorities prefer the development of regional crime scene teams, perhaps one in each detachment which would be closer than a single team in Anchorage, and theoretically better able to respond. In addition there is the indisputable need to offer training to all police agencies through-

out the state in field analysis and evidence handling, to generally build better capabilities and develop additional expertise for solving crimes of whatever nature and better investigation of vehicle accidents.

Receipt of items of evidence at the laboratory from both local police departments and AST Detachments often involves improper procedures in the handling, labeling, packaging and shipment. Occasionally some items are received via regular mail which breaks the chain of custody. Some are received by certified mail rather than by registered mail. Flammables are sometimes received in plastic bags instead of tin cans, large items that are not flat are received in envelopes which may become torn in the mail and similar related problems. The situation has reached such proportions that the laboratory has had to develop a standard memorandum with places for check marks to describe the specific problems encountered which is then mailed back to the submitting agency.

Evidence received from the field is stored in two extremely crowded rooms in the laboratory. Red evidence tags with case-related information accompany most items of evidence. However, not all laboratory clients use this same tag. Although all Trooper evidence has these red tags, as well as some local police agencies, other local and regional police agencies use their own, and some local departments don't use any. [This situation necessitates the Evidence Technician preparing a red AST tags as a second tag, when local tags are insufficient to include all needed information.] In particular an AST tag is prepared when the local tag does not have enough spaces to record the complete Chain of Custody. This situation is not a serious problem since the Chain of Custody is maintained on the laboratory request. However, there is an obvious lack of standarization which is not desirable.

Evidence is stored in large manila envelopes or cardboard boxes of varying sizes depending upon size of the items. Because of cramped storage area, numerous items of evidence comprising several cases may be stored in a single box, whereas cases involving a large number of items may be stored in several boxes, some of which may have evidence from one or more different cases, thus posing the potential of mixed up or misplaced items of evidence.

Upon completion of testing, the items of evidence from client agencies are shipped back to those agencies. This evidence from local police departments does not accumulate to become part of the massive evidence storage problems confronting the laboratory. Clearly almost all evidence in the evidence room is from the State Troopers.

All evidence from Trooper cases dating from 1978 to the present is stored in a computer which involves a terminal in the evidence room. Thus all data can be retrieved by case number, description of items of evidence, the officer involved, and dates. A problem arises, however, if evidence is submitted to the laboratory independently by the investigating Troopers, without coordinating the numbers assigned each item on the ST-10 form. The computer will not accept duplicate numbering of items of evidence which may occur if more than one officer submits evidence and uses the same numbers, nor will the computer display any numbered items of evidence if there is a break in the sequence of the numbers used by the investigating officers.

The results cause additional work for the Evidence Technician who must assign the next sequential numbers following those already used for evidence submitted, change the numbers on the evidence tags, and then advise the submitting officer of the change. Confusion can obviously occur when the numbers assigned to items of evidence must be changed.

At present, the disposition of evidence from criminal cases is handled in various ways both within the several detachments, the crime laboratory and apparently by local police departments. Some Trooper evidence dates back to 1973. As a result, some locations are relatively up to date and do not have a significant amount of evidence from old cases, whereas other locations have a large amount of evidence in storage going back many years.

The age of a case, of course, is not the sole determinant of whether it should be disposed of. In homicide cases and other serious cases it is desirable to hold the evidence until sentences have been served, since any time less than that may involve an appeal and possible need for the evidence. However for cases in which the defendant has been found not guilty or the case dismissed or cases in which time has passed and prosecution does not appear likely, the evidence can probably be destroyed, returned or otherwise disposed of. A single "bunny book" containing a blood stain from an assault six years ago represents a case that probably will not be prosecuted nor is the evidence of any conceivable value. Evidence in the crime laboratory represents cases awaiting prosecution, cases already adjudicated involving sentences already served, to cases with no statute of limitations. Evidence has not been segregated and stored according to case status, severity, or other criteria, but rather reflects use of whatever space is available in the two extremely crowded evidence rooms.

At present, there are court orders pertaining to disposition of evidence on a case by case basis, and at least one order of about six years ago that authorizes disposition of evidence from all cases meeting certain criteria. However, that order is for only one Judicial District. Until recently, there apparently was no statewide authorization

for disposition of evidence from cases meeting certain criteria. Now, however, under legislation passed in 1982, (SB-535) provisions are made concerning disposition of property, but unfortunately the wording is too rigid, and problems may result.

Although the problem of accumulated evidence is serious, the Evidence Custodian has been contacting individual troopers on his own initiative, asking them for disposition instructions for evidence in old cases. That this particular approach can be fruitful is well illustrated by one trooper who cooperated fully in this effort. Originally he had four and one half pages of single spaced items of evidence on the computer for his cases. After his review and determination that numerous items would no longer be needed, his list of evidence was decreased to two pages. However a problem arises in that some troopers have not been cooperative, and have not responded to these requests.

The methods and means by which evidence is physically destroyed varies, both within AST and probably from one local department to another. The certification of destruction similarly varies, from the relatively informal approach to the well documented. Lack of good procedures in the destruction of evidence, particularly drugs, firearms, and cash exposes law enforcement agencies to possible criticism and embarrassment.

Adding to the clutter within the Troopers evidence rooms is the accummulation of "found property" of varying descriptions age, and value. Until passage of the earlier referred SB 535 there apparently nas been no uniform policy regarding such property and its eventual disposition. Some evidence rooms are relatively free of these items, usually reflecting a recent "cleaning out". Other evidence rooms

have significantly more. In any event, found property utilizes valuable storage space and contributes to the potential of mixed up or misplaced items of evidence from criminal cases.

As the result of on-going efforts by the Court System to dispose of items of evidence introduced into proceedings which they must store, the evidence storage problem at state and local law enforcement agencies throughout the state may be substantially increased. Court System evidence will soon be transferred to the investigating law enforcement agency. Some evidence dates back to statehood. Presently, in Anchorage at least, the court system is cleaning out old evidence from civil cases. They estimate they will begin returning evidence from criminal cases in late 1982. Absent any effort before then by law enforcement agencies to dispose of existing evidence, their evidence storage problems will likely get worse before they get better.

In addition, there appears to be no means by which items of evidence in the laboratory that are of value to the police are being retained for legitimate law enforcement purposes. Firearms, cartridges and related items could profitably be used as the laboratory expands it's capabilities to include firearms identification. Certain handguns and rifles could possibly be used as issued weapons for state and local police agencies and Fish and Wildlife Protection personnel. Displays could be constructed showing contraband and illegal articles for public presentation and viewing.

Finally there are items of evidence in the lab slated for destruction that are of use and have intrinsic value, such as stereo components, TV sets, fishing poles, and numerous

items that could be sold at auction, with the proceeds going to the State's General fund or to charitable organizations which might obtain them at no cost.

Following are the recommendations pertaining to evidence gathering, handling, storage, and disposition:

38. Investigators be Assigned to the Laboratory

The problem of spanning the gap between the investigators and the laboratory, in terms of working closer together, becoming familiar with each others problems, having better crime scene work performed, and obtaining better evidence for analysis may perhaps best be met by assigning two investigators from Major Crimes Unit to the laboratory on a rational basis to function as a Crime Scene Team.

In addition, at least one Trooper Detachment has an Investigative Sergeant who responds to vehicular homicides, rapes and related crimes. He has assigned to him a new Trooper for a period of six months, who receives training in investigations. Then, two to five years later the Trooper is probably transferred to the bush. The Investigative Sergeant could temporarily be assigned to the laboratory because he would then be in a better position to instruct the Troopers. The advantages of a better trained Trooper in the bush handling serious crimes are obvious.

These Investigators would be responsible for processing major crime and certain highway accident scenes, including the determination of what constitutes evidence, gathering, tagging and packaging it, and providing for its delivery to the laboratory, and all associated paperwork plus the photographs, fingerprinting, obtaining clothing, etc., at autopsies. This would permit the investigator assigned to the case to immediately begin interviewing witnesses, making the telephone calls and all the related investigative activities, without having to spend often considerable amounts of time at the scene. Particularly with homicides, the first day or so is crucial to the successful investigation of the case.

From time to time the Crime Scene Team would also take one or more of the laboratory staff with them to show them how the investigator approaches the crime scene, how they determine what constitutes evidence, what should be fingerprinted, what things should be photographed, and related aspects.

In rural areas, the local police officer and the trooper should also be involved with the team so that they can assist them, as well as become familiar with methods and techniques the "experts" use. Similarly, the team should establish good liaison with local police departments and offer to assist them as needed. Arrangements could also be worked out whereby local investigators could spend several days at the statewide laboratory, observing how the evidence is handled, inventoried, how tests are performed and why a certain amount of evidence is needed in an uncontaminated condition, and related aspects sufficient to show them why the laboratory has certain requirements pertaining to evidence. Other Trooper Investigators could also spend several days in the laboratory for the same purpose, thereby sharpening their own skills relating to crime scenes and evidence.

The proposed Crime Scene Team could also rotate with the proposed three man training team, as described in the training section, to travel with a prosecutor and a member of the laboratory, to conduct local and regional classes relative to evidence recognition, handling, identification, shipping and the supporting paperwork.

The investigators from CIB should be assigned to the laboratory on a rotating basis for perhaps six months with overlapping terms to assure continuity. In this way all the CIB investigators will eventually complete the laboratory tour. When personnel are in place, the Laboratory Director and the CIB Director should contact client agencies apprising them of this additional, improved capability. This recommendation should insure speedier investigation of major crimes, more professional handling of crime scenes, better quality evidence going into the laboratory, familiarization of both laboratory personnel and investigators with each others requirements and problems, better trained local and Trooper investigators, and more effective prosecution.

39. Standard Evidence Tags

The situation of lack of standardized evidence tags can best be met by offering all client agencies a supply of the red trooper evidence tags at no cost, and suggesting their use as a means whereby they can assist in standardizing laboratory operations and thereby improving laboratory services. It is recognized that some client agencies may decline the use of the troopers' evidence tags.

40. Standard Size Evidence Containers

The present system of the use of various sized cardboard boxes to store evidence at the laboratory should be changed to the extent that standard size boxes be used. These should be purchased commercially and be of a size that maximizes the space available in each bin. If possible two smaller boxes should total the same space as one large box to facilitate any stacking that may be required, and to conserve available space. Although space limitations at present may preclude immediate implementation, this recommendation should be viewed as a long term objective.

41. One Case per Container

Closely related is the recommendation that only one case be stored in one (or more) containers. This will further reduce the likelihood of misplaced items, or items inadvertently destroyed with items from another case that were in the same container, as well as enhance locating the evidence in the storage area. As with the standard size containers the existing space problems may not permit immediate implementation.

42. Evidence Information Entry Into the Computer

The problem of duplicate numbers being assigned to different items of evidence and breaks in the sequence of numbers used in a given case can best be met by the lead Trooper assigned to the case being responsible for assigning the numbers used for each item of evidence. Other investigators would need only to telephone the lead Trooper to obtain the next number for each item being submitted.

43. Determination of Evidence Disposition Policies

The lack of an overall statewide standardized policies and procedures relative to determining disposition of evidence by both state and local police agencies can best be addressed by a joint effort between the Department of Law and the State Troopers.[15] Such effort might also involve the Court System. Consideration should include cases in which the District Attorney declines prosecution, cases dismissed by the Court, cases in which the defendant is found not guilty, evidence that is contraband, cases in which

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[15]Letter from T.R. Anderson, Director, AST to Dan Hickey, Chief Prosecutor, Dept of Law, May 5, 1982, & letter from Dan Hickey to T.R. Anderson in response, May 28, 1982.

the defendant is found guilty, cases involving probability of post conviction relief, evidence introduced into proceedings and thereby held in storage by the court system, evidence that the DA determines will not be used in prosecutions evidence from cases in limbo for some time for which prosecution is not likely, evidence from cases in which the investigating police officers are no longer with their departments, evidence seized by search warrant which requires court order for disposition, and perhaps others. Procedures to implement the agreed upon policy should also be developed.

The results of such interagency effort should become policy guidance for the laboratory, AST detachments, and should be disseminated to local police agencies for their review and possible adoption as their policy. The policies adopted should also be included in the Lab Manual for continued reference by all client agencies. Operating Procedures Manuals of the Troopers and local police departments should likewise reflect these policies and procedures.

Such standardization of policies and procedures should substantially reduce problems of lost or misplaced evidence needed for trial, instances of theft, and related evidence problems that sooner or later plague every police department. It is further recommended that no additional computerization involving Trooper evidence prior to 1977 be undertaken until an evidence disposition policy is determined. This project will be an onerous and often frustrating job.

44. Immediate Disposition of Items of no Value

While standardized procedures need to be developed, court orders received and liaison developed with the District Attorney for long term policy about evidence retention/disposition, it is equally true that there are numerous items, in the laboratory many years old, of obviously no value or future use that should be destroyed.

45. Long Term Evidence Storage

Existing evidence in storage at the laboratory should be evaluated according to the severity of the case it represents. Evidence from homicides, forcible rapes and other heinous crimes may have to be stored for the length of the sentence, since any successful appeal may involve the need for this evidence. Such evidence should be transferred to secure, long term storage, thereby freeing space for more immediate use.

46. Convert Storage Space to Operational Use

Through a combination of the foregoing ways to reduce the present large volume of space devoted to storing evidence, it is recommended that one of the two storage rooms be emptied as quickly as possible. This space can then be used for expansion of lab services even before the completion of the new lab building.

47. Photographing Evidence

As part of the preceding recommendation it may be possible to expand the photographing of items of evidence, return the evidence to its owner and retain the photograph instead of the physical evidence. This is now being done in cases involving large items such as vehicles. Such a system has the advantages of allowing the owner the use of the evidence such as items stolen in a burglary and reducing the physical space that would have been required if the items themselves had to be stored. The Intake Officer for the District Attorneys office in Anchorage indicates that no universal guidelines can be set covering photographing versus storing the evidence.[16] It's clear however that this approach is possible only where cases have progressed to 60 to 90 days after convictions which allows substantial time beyond the 30 day time for filing an appeal. It is likely that the defendants consent may be needed to return evidence after photographing it. The final decision rests with the District Attorney who will have to review each case individually. The investigating officer also must be aware of what happens. Because of the case load in the District Attorneys office and the fact that evidence storage is really a problem of the police it seems reasonable that initiation of requests to the District Attorney to photograph and return evidence would best be made by the Evidence Custodian in the laboratory and the police in general. Some means is needed whereby the laboratory and police departments can track each case and thereby know when to initiate the request to the District Attorney. A recording and records management system will also be needed.

Since this approach seems feasible and beneficial to all concerned it is recommended that procedures be set up with the District Attorneys office in accordance with the terms of SB 535, to determine when retention of photographs, rather than the actual items of evidence can occur.

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[16]Conversation with Steve Branchflower, Department of Law, June 4, 1982.

48. Disposition Assistance by Troopers

Previous efforts by the Evidence Custodian to contact trooper personnel to obtain disposition of evidence from old cases has in some cases not elicted any response. It is recommended that in the absence of a Laboratory Director, the higher ranking commissioned officer ultimately responsible for the laboratory prepare and send the necessary memorandum commanding the response of troopers involved.

49. Destruction of Evidence

The actual destruction of evidence by all law enforcement agencies should not only be above reproach but should also have all appearances of being above reproach. Two recommendations:

a. Standardized policy be determined about the methods to be employed for destruction of the various types of evidence.

b. When evidence is to be destroyed, a disinterested third party witness the destruction. All persons should sign a form attesting to their witnessing the on-scene destruction of the evidence. Under no circumstances should signatures attesting to the destruction of evidence be made before the actual destruction occurs.

50. Evidence to be Returned by the Court System

To prevent a worsening of the evidence storage problem by the return of evidence by the Court System that has been used in proceedings, it is recommended that the policies determined for evidence disposition be applied to the evidence now being held by the Court System before it is sent back to the laboratory detachments and local departments. If delay occurs in policy determination, the additional evidence will have to be accepted and disposed of at a later time. It is also anticipated that evidence received from the Court may suffer from breaks in the Chain of Custody, which may be a problem if such evidence is used again in post-conviction relief.

51. Found Property

a. There are several implications in the new legislation relating to "found property" embodied in SB 535.

To the extent that "found property" contributes measurably to the problem of storage within evidence rooms, it is recommended that the influx of new items be reduced by keeping records of the property, but suggesting the property remain with the finder. The finder's report to a peace officer is apparently sufficient under the new statutes (11.46.160). He apparently can keep found property after reporting that fact to the police.

Policy and procedures should be developed concerning disposition of existing found property now in storage by AST and presumably local police departments, in accordance with the terms of SB 535, which now seem to require the police agency to hold the property for only two years, after which time it can be disposed of. Coordination should occur with the District Attorney concerning developing policy relating to found property.

52. Weapons Collection for Ballistics Purposes

Since it is reasonable to assume that a Firearms Identification/Tool Marks Examiner will be among the several additional staff positions hired for the lab, it is necessary that he have reference to a wide variety of firearms and cartridges. It is therefore recommended that the laboratory, all detachments, local police departments and the Court System be requested to not destroy any firearms without first contacting the laboratory to determine if the weapons in question are needed for laboratory purposes. This should also be carried out in coordination with the District Attorney and the terms of SB 535.

Until such person is hired it is recommended that the Administrative Officer for the troopers, a technically knowledgeable firearms and ammunitions collector, and author be given the responsibility for this aspect.

Although most firearms-related crimes involve handguns, it is equally true that big game violations investigated by the Division of Fish & Wildlife Protection include rifles and shotguns. The development of a weapons collection should therefore include these weapons as well.

53. Weapons for Law Enforcement

Part of the weapons collection concept should include the retention of all .38 caliber and .357 caliber handguns in good condition for future use by Troopers, Fish and Wildlife Protection, local police officers,

and for newly developed police departments. It makes little sense to destroy these weapons one day and have new ones ordered as part of the equipment for a uniformed officer the next day. Further, turning over such weapons to local police departments results in financial savings to them. Legislation may be needed to give handguns to local departments because the guns are state evidence if involved in a state offense. This issue should be researched.

54. Disposition of Evidence of Value

A substantial number of items of evidence slated for destruction represent some use and value, such as fishing poles, TV sets, stereo sets, and numerous other items. The destruction of those items represents a waste. Policy should be developed in coordination with the District Attorney whereby items of value could either be sold at auction or donated to charitable organizations.

H. TRAINING, EDUCATION, and PUBLIC INFORMATION

Training, education and information about criminalistics is one of the most often mentioned needs by Alaska State Troopers, local police departments, laboratory personnel, judges, and district attorneys.

A major need is information throughout the criminal justice system about what the crime laboratory does and will be able to do in the future. There is a need to convince client agencies about the value of forensic tests and the prominent place they have in a carefully conducted investigation and later prosecution. Some officers both within State Troopers and at the local level view the existing laboratory with skepticism while others simply will not refer certain tests to the laboratory since they do not think the laboratory does a good job in certain fields. The validity of these perceptions may or may not be accurate. The important thing is that they exist. They represent an impediment to both good police investigations and prosecution.

Training for police officers relative to crime scene work conducted at the Trooper Recruit Academy and the Municipal Police Academy, is viewed as inadequate by troopers and local officers, particularly when these skills may not be used within the ensuing months. After completing the field training, some trooper assignments are in Judicial Services and Traffic enforcement that do not involve crime scene investigation. Even when they become involved initially in a crime scene such as a burglary while working on patrol, investigators usually take over and the trooper resumes his patrol. In time, transfers and promotions occur. When assigned to a bush post the trooper may have had very little experience in crime scenes. He may even be assigned as an investigator with little prior experience in actually working a crime scene, and with only his recruit academy training as formal classwork.

Not only may the Trooper Academy training be inadequate, there appears to be no crime scene and forensic related courses available through the University of Alaska or the Community College System. However there are criminal justice related courses available leading to a degree in Police Science.

Training is also a concern of the laboratory personnel. Even though they may be fully qualified when hired, the state of the art advances in technology and methodology are continuously changing. To remain up to date they must be given the opportunity to regularly attend professional courses. Attendance at courses also enables them to exchange ideas with other professionals in their field, quite apart from information received in class. To not remain up to date may ultimately result in the use of outdated methods and approaches, and adversely affect their credibility as an expert witness.

Presently the laboratory has a limited professional reference library. The laboratory also has no library room or reading room where staff can retire quietly for researching information, or reading periodicals to keep abreast of developments in their field.

Following are the recommendations pertaining to the broad field of training, education and public information.

55. Improve Laboratory Manual Brochure

An excellent means to present information about forensic capabilities is through the existing Laboratory Manual and the small laboratory brochure. However, many police officers are unaware of these publications. Indeed two laboratory employees were unaware of the existence of these items. The manual is dated, incomplete and does not have a professional format. It should be updated, with provisions made for periodic changes to reflect the increasing capabilities in the years ahead, the format changed, and the publication professionally reprinted in sufficient quantity for distribution to all client agencies and others with a need for such information.

The small brochure should similarly be redone and used as a general means of presenting information of a non-technical nature for distribution to all interested individuals. This brochure will have to be reprinted periodically to reflect changes in the laboratory since it cannot easily be updated.

56. Communications With Clients

A major reason for the general ignorance of client agencies about the laboratory and its capabilities is that no one representing the laboratory has talked with many of them about the laboratory, obtained their ideas of the short-comings, recommendations for improvement, etc. As soon as possible after the hiring of the new Laboratory Director it is recommended he initiate a program of communications with all existing and potential client agencies by personally visiting each, talking with the agency head and establishing good rapport. This relationship should result in client agencies better understanding the laboratory and its capabilities, the resolution or explanation of problems that have or may develop, and an increased use of forensic tests in general. The director should also visit with district attorneys and judges to apprise them of laboratory operations.

57. Laboratory Publication

Perhaps the best way of keeping client agencies advised about the laboratory and also extending a degree of training is through the use of a monthly informational publication or newsletter. It could cover a wide range of topics including but not limited to information about new laboratory personnel, their field of expertise, general information about criminalistics, state of the art advances, new equipment obtained and it's capabilities and uses, schedules of training sessions in the field, legal decisions of interest, a recap of a particular case in which forensics played a prominent part and related topics. Ideas may be obtained from the series of bulletins published by the California Bureau of Forensic Services.[17]

These recommended informational bulletins while produced monthly should be three hole punched and retained in the field to form a growing forensics reference for criminal justice system agencies.

58. Director's Comments

The use of the "Director's Comments", the monthly videotaped messages from the Director to State Trooper field personnel can also assist in getting information about the laboratory at least to Troopers in the field. The Director can describe the latest information about new technical expertise, capabilities of forensic equipment, the outcome of a trial in which forensic tests were of significant value and so on.

59. Video Presentations

A related approach to training and information is the development of a series of video tapes pertaining to the laboratory and the broad subject of forensics. The entire series can then be duplicated and copies sent to detachments, local police departments, and other client agencies. One tape might be an overview of forensic sciences and the laboratory in general. The other tapes could deal with specific subjects, such as crime scene analysis, evidence gathering, shipment, actual laboratory analysis, and related topics. Major crimes investigators in the Troopers and local police departments as well as laboratory personnel could suggest topics for videotaping that would be of particular value.

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[17] "Physical Evidence Bulletin," Department of Justice.

60. Forensics Training Team

It is recommended that one or more of the major crimes investigators, district attorneys, and when possible, a member of the laboratory staff be designated to form a team to travel throughout the state to conduct courses to all law enforcement agencies about evidence recognition, collection, handling, preservation, shipping and related forensic topics. This three man team can structure their training about what the police can do in terms of gathering evidence for analysis; what the laboratory can do in terms of the tests and analyses of the evidence; and what the District Attorney can do with the crime laboratory analyses in the courtroom. The training should primarily be directed to law enforcement agencies, but special seminars could also be developed for prosecutors to fully apprise them of the value and use of forensic analyses in the courtroom.

One aspect of the training should be a presentation of methods of evidence analysis, in laymans terms, to explain the importance of certain evidence handling procedures in the field. The earlier referenced physical evidence bulletins from California might be used as a basis for such training.

The training team should establish a good relationship with the Anchorage Police Department training academy. As the client agency with the largest number of personnel and thus potentially the largest user of the laboratory, the Anchorage Police Department should be involved to the fullest extent with forensic training programs.

It may be appropriate to host training programs at regional centers for numerous smaller police agencies for which on-site training in each community would not be a cost effective approach. Partial costs might be paid by the State Troopers if local resources are not available.

Since the primary beneficiaries of the training program would be police officers, the coordinator of the team should be a major crimes investigator who enjoys conducting training and who has already proved to be a good educator.

Likewise it is recommended that the Director of the State Troopers meet with the Chief Prosecutor in the Department of Law to determine if an experienced District Attorney who has an appreciation of the

value, and potential of criminalistics, and is a good educator, could be assigned to work full time as a member of the training team. If necessary, the legislature should be asked to fund an additional District Attorney as part of the improvement of forensic services.

Funding would also be required for purchase of training accessories, such as films, film projector, expendable items for demonstration and related materials. Travel and per diem expenses are also needed.

Correct personnel selection with long term tenure is the key to the success of this recommendation. It will not succeed if the positions in the Troopers and Department of Law are used for other purposes, and the responsibility for training is shifted from one person to another, depending upon who is relatively free at the moment to try to conduct training. A full-time professional training team is needed with training as their only priority.

When the training offered by this team seems to have addressed the need in the field, the investigator and district attorney can be phased back into other duties, but must be continually available from time to time to conduct further training and refresher courses to assure a continuing high level of knowledge relative to forensics within the justice system in Alaska.

61. Review of Existing Academy Training

After spending several months presenting the training, the training team will have revised their course as they deem appropriate to meet field requirements. At this point, the team should review the curriculum and training aids for the Recruit Academy, Municipal Police Academy and VPSO training at Sitka to determine whether adequate time is devoted to forensics instruction. If determined inadequate, suitable recommendations for changes should be made. The team should also review the adequacy of reference materials in the Sitka Academy library.

It is recognized that any recommended increases in Academy training time may be met by the response that the curriculum is now full and that the recruits can absorb only so much. If this is the case, then serious thought should be given to requiring troopers to complete a specific training course relative to forensics before being sent to a bush post or other assignments involving responsibility for handling crime scenes.

62. Forensic Training For the Fire Service

Recommendations from the State Fire Marshals Office concerning the laboratory reveal the need for training in evidence gathering and handling for local fire departments which are invariably the first on the scene and upon whom rests the responsibility to determine cause and origin of a possible arson fire. Such training would of course await the labs capability to perform hydrocarbon analysis for traces of accelerants and would best fit as part of another fire service training program. Since arson is a crime, although discovered first by firemen rather than policemen, the law enforcement community should assist the fire service in training local fire fighters about evidence handling relative to suspected arson fires. The most appropriate approach would be to enlist the aid of the State Fire Marshal to help develop the arson related course work and through the Fire Marshal, offer to assist in instruction.

63. Training For Laboratory Personnel

Laboratory personnel should be offered opportunities to attend professional training courses, such as at the new FBI facility in Quantico. The Special Agent in Charge in Anchorage is willing to assist in the enrollment process. Other specialized forensic courses are held elsewhere in the United States that are of value to the personnel in the laboratory. Periodic training is needed to assure that personnel stay abreast of the latest techniques and methodologies, and to consult with other professionals from around the country, thereby establishing contacts of possible value in the future. A goal of each laboratory technician attending a minimum of one professional training course per year should be established.

A training course in courtroom procedures, testimony and personal decorum should be developed for all laboratory personnel who may be required to testify in court. The training should be develped by a major crimes investigator who has participated in numerous trials, and by an experienced criminal prosecutor. Both can use their own experience to develop the training. A Moot Court session can also be developed in which the prosecutor can play the part of the defense attorney. Completion of such training should improve the impact of testimony offered by laboratory personnel.

Additional training for laboratory personnel should occur through in-house training relative to procedures and techniques to be employed as well as to explain any new developments and approaches. Such training should be on-going, perhaps an hour or two a week, rather than on an irregular basis.

64. Laboratory Reference Library

A scientific library and reading room should be part of the new laboratory building, as noted later. For purposes of this section, periodicals, professional journals and reference texts should be subscribed to and purchased, as suggested by laboratory personnel.

65. Professional Associations

Laboratory personnel should also be encouraged to join their respective professional organizations and be afforded the opportunity to attend annual meetings. As is true with attending training courses, valuable contacts will be made by attending professional organization meetings. Attendance at such meetings and belonging to professional organizations also enhances personal credibility in court.

66. Reference Services

The laboratory should make arrangements to be able to obtain forensic related information from one or more automated resource services in order to obtain periodic reviews of articles.

67. University Courses

As time permits the laboratory and the Criminal Investigation Bureau should check with the University of Alaska to ascertain the possibility of setting up specified courses relating to criminalistics. Such courses may possibly be taught at regional centers in an intensive manner, whereby a semesters length course could be taught on a full time basis in perhaps one week. Such arrangement would make it possible for officers from several communities to attend, whereas a more lengthy, semester long course would not be feasible.

The training team could assist with instruction and training aids as requested by the University.

It may be possible that semester length courses be conducted through the Community College System in the larger communities whose law enforcement complement would justify conducting such a course. The

Laboratory Director could be a guest lecturer from time to time, or possibly even a full course instructor for the Community College or the University.

However it may all work out, the potential of the University and Community College system should be evaluated as one of the means used to further training and education for criminal justice system personnel in the field of forensics.

I. Proficiency Testing, Laboratory Accreditation, and Personnel Certification

Both the investigator and the laboratory analyst agree that the highest order of scientific analysis must be used if a suspect is to be properly judged regarding involvement in a crime. Anything less invites the possibility of a guilty person going free, and even worse an innocent person being falsely convicted. To provide less than the highest standards subjects the forensics profession to the consequences of rejected work and discredited testimony. There can be no substitute for quality in a crime laboratory.

Proficiency testing, personnel certification and laboratory accreditation all aid in quality assurance.

The laboratory currently participates in proficiency testing on both a regional and national basis with other crime labs around the country. The nationwide testing program which includes laboratories in some foreign countries is conducted on a voluntary basis. The laboratories periodically send each other a substance for analysis. Each laboratory is assigned a number for each test. The results of the tests are listed by number rather than the name of each laboratory.[18]

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[18]For additional information about the national testing Program, see "Crime Laboratory Proficiency Testing Research Program", by LEAA, 1978.

The laboratory also began a proficiency testing program with the specialty laboratories used to perform tests that could not be conducted in-house. The intent of such a program is to insure quality performance of these other labs. Periodically these other labs were sent items for analysis or testing. In this way the Statewide Crime Laboratory can identify those facilities that perform accurate work and those that do not. This is one means of identifying and maintaining satisfactory laboratories elsewhere for specialty work under a full services laboratory concept. However, this program has not continued beyond the initial steps.

At about the same time the laboratory began proficiency testing among its own personnel, but this effort has not been consistent nor is it yet a formalized policy of the laboratory.

Following almost as a natural consequence of the development of crime labs in the 1970's was the concern about quality assurance of these labs. Spurred on by LEAA, the several crime laboratory directors formed the American Society of Crime Laboratory Directors (ASCLD) which thereafter developed a voluntary program of accreditation standards by which a crime laboratory could have it's operations and procedures compared against a national norm.

ASCLD recently set up a Laboratory Accreditation Board which was to perform the actual on-site inspections. Four major objectives were seen as the outcome of the proposed accreditation program:[19]

- Improve the quality of the laboratory services.

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[19]"Accreditation Standards and Program," American Society of Crime Laboratory Directors, Laboratory Accreditation Board, August 1981, P. 2.

- Identify laboratories nationwide that would satisfy accreditation standards.

- Develop and maintain criteria which could be used by a laboratory to assess its performance and strengthen its operation.

- Provide an independent, impartial, and objective system by which laboratory facilities could be evaluated.

Laboratories are to be inspected by a team of two or more directors of already certified laboratories, who use an extensive and detailed inspection procedure. Certification is for a period of five years, with provision for recertification.

Not being accredited by the Society would not necessarily mean a laboratory is inadequate, since the accreditation program is entirely voluntary. Clearly, however, accreditation is assurance that a laboratory has met national standards.

Unfortunately, the entire issue of accreditation has not been fully accepted by the forensic community nation-wide. While conceptually the idea of national standards is a worthy good, the program has not been extensively used. Until adopted by all criminalists, its impact nationally will continue to be limited.

The existing laboratory has certain recognition attesting to high standards that has been extended by the Alaska Department of Health and Social Services concerning verification of the chemical composition and volume of ampoules used in the statewide breathalyzers, and by a review of the laboratory by the Drug Enforcement Administration.

Personnel certification is another means to assure quality performance as well as personal credibility in court, but this program has been initiated on only a partial basis nationwide, generally along a discipline by discipline approach. For example the Association of Firearm and Tool Marks Examiners has a personnel certification program as does the International Association for Identification for its Latent Fingerprint Examiners, among others. However certification for criminalists, such as forensic chemists, serologists, trace evidence specialists and others, although spurred on by LEAA funding has not yet been initiated due to several unresolved concerns by ASCLD membership. Thus within the existing laboratory most of the Latent Examiners are members of and have been certified by the International Association for Identification, whereas nocertification program has yet been accepted for the forensic chemists.[20]

Following are recommendations relating to Proficiency Testing, Laboratory Accreditation and Personnel Certification:

68. Laboratory Proficiency Testing

The Laboratory should continue its present participation in national proficiency testing, and should also formalize in-house proficiency testing.

69. Proficiency Testing of Resource Agencies

The laboratory should initiate a proficiency testing program for all the specialty laboratories used, for whatever purposes, whether such facilities are those used for relatively common testing at the present, or

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20 For additional information about crime laboratory proficiency and related management aspects, see "Barriers to Quality Achievement in Crime Laboratory Operations," by L.W. Bradford as presented at the Plenary Session, 32nd Annual Meeting of the American Academy of Forensic Sciences, New Orleans, La., Feb 20-23. 1980.

for the relatively infrequent tests that cannot be justified even when the full services laboratory is operational in the future.

70. Personnel Certification

Personnel certification should be pursued to the fullest extent possible. All laboratory personnel should seek and maintain certification from their respective professional organization.

VI. NEW LABORATORY FACILITY

The development of a full-services laboratory is dependent upon a new physical plant with the unique requirements for electrical, plumbing and ventilation systems characteristic of a forensic facility. It is these requirements that set a laboratory apart from commercial building space, make a laboratory more expensive to build and make it difficult to remodel an existing building to a forensics well functioning laboratory.

The state owns land adjacent to the existing Trooper headquarters building in Anchorage. This land has been tentatively identified as the site for a new lab for the past several years. Municipal utilities are available at this site. The close proximity to both the Trooper headquarters, the Anchorage Post, and Anchorage Police Department present obvious advantages.

The unique design requirements pertaining to a crime lab led to a visit to the Forensic Science Training and Research facility in Quantico, Virginia, the site of the FBI's National Academy, and also to the FBI's laboratory in downtown Washington. Information was obtained concerning the FBI's experience when they built their Training and Research Center in 1981. Although their facility involves training as well as forensic research, their opinion was that their experience would be applicable to just a forensic laboratory. The FBI's analysis of their costs for scientific instruments, and the costs for laboratory furnishings as a percentage of the final cost of the building, should generally hold true for constructing a new lab anywhere. Similarly their cost per square foot related to the cost of a commerical building should also provide good guidelines for estimating the cost of a local lab.

The FBI's experience indicated that:

- The total cost of a forensic lab building will be approximately 180% of constructing commercial building space, due to the unusual electrical, ventilation, plumbing, and structural requirements.
- The cost of scientific equipment will total about 75% of the cost of the building.
- The cost of furnishings will total about 15% of the cost of the building.
- Half the total laboratory space will be operational space, and half will be non-operational (such as hallways, storage areas, stairs, closets, etc.).

In an attempt to develop the approximate cost of a new laboratory in Alaska, the following assumptions have been used:

1. Total building cost will be about 180% of commercial building cost. (In Anchorage, as of August 1982, commercial space costs about $110.00/square foot according to the Alaska Department of Transportation and Public Facilities.)
2. The cost of fixed equipment-tables, chairs, benches etc., will total about 10% of the cost of the building, since certain items of fixed equipment are already available in the existing laboratory.
3. Approximately half the floor space will be non-functional areas, such as stairways, halls, storage areas, closets, etc.
4. Each lab analyst requires approximately 150 square feet of workspace which includes benches, tables, etc.
5. The Department of Transportation and Public Facilities will require 30% of total project cost as their overhead.
6. The laboratory will be built on state land. Therefore it is assumed that there will not be any cost for the land.
7. Emergency power required by the laboratory will be supplied at no cost as part of a project now underway to provide stand-by power to the Trooper headquarters building. This project includes an additional power plant specifically for the new laboratory.

8. Inflation will increase costs of construction, and purchase of equipment and furnishings by about 15% per year.

9. The recommended increase in professional staff occurs.

10. The fingerprint section in Juneau moves to Anchorage and the automated fingerprint identification system becomes part of the laboratory.

11. Although this plan is nominally for the next five years, the physical plant, many of the furnishings and most of the equipment will last far beyond five years. The useful life of many of these items will probably be 20 years and even longer for the building. In addition, the states' population will double or triple in 20 years and there is no indication that crime will diminish. The need for forensic testing will likewise increase. Therefore it is reasonable and prudent to plan now for circumstances beyond five years. Scientific equipment, for example, will become more sophisticated in the years ahead. While one could purchase an item of limited capabilities to handle existing needs, it seems prudent to purchase an instrument that costs more initially, but lasts longer, has a wider range of capabilities, and is of such design that permits modular retrofitting to keep it up-to-date.

In addition to these assumptions, a statewide laboratory in Alaska should also consider, and plan for expansion in the future, rather than move into a building that does not permit any expansion. While the determination of the extent of expansion is admittedly arbitrary, and one that can be changed, 50% of the initial floor space is used for planning purposes. In addition, suitable space should be included for a medical examiner system, although that is not considered in this plan.

A. Space Needs

Based upon the experience, and recommendations of the FBI concerning space requirements and allocations, the following are the space needs estimated for the new lab. They have been calculated on the basis of operational, non-operational, and future space requirements.

1. Office and Work Space: (Calculated at 150 sq. ft. per person unless otherwise indicated)

Existing Staff (12)

a.	Three forensic chemists	450 sq ft
b.	Four Fingerprint Exam.(2 moving from Juneau)	600
c.	Three photography (including OL Photo Tech's)	450
d.	Two clerical at 100 square feet	200
	Sub total	1700 sq ft

New Hires (11)

a.	Serologist	150 sq ft
b.	Trace Evidence Technician	150
c.	Firearm and Tool Marks Examiner	150
d.	Additional Forensic Chemist	150
e.	Administrative Assistant	150
f.	Laboratory Director	200
g.	Photo Technician	150
h.	Two Fingerprint Examiners	300
i.	Two Investigators (transfer from CIB)	300
	Sub Total	1700 sq ft

2. Other Operational Areas:

Central area for use of common equipment	1000 sq ft
Fingerprint Area - Automated system	600
Darkroom and Photography/OL Photo	750
Sub Total	2350 sq ft
Total Operational Area	5750 sq ft

3. Non-Operational Areas (Hallways, stairs, storage, closets etc.)

Non-operational areas are estimated to be about 5500 square feet.

4. Future Expansion

An additional 5500 square feet, or about half of the above total is proposed.

A recap of total spatial needs are:

Operational Space	5,750 sq ft
Non-operational Space	5,500
Expansion	5,500
Total	16,750 sq ft

Using the foregoing space figures and cost assumptions, it is possible to obtain an approximate cost figure for the proposed lab.

Total Space of approximately 17,000 square feet multiplied by the average cost of commercial space in Anchorage of $110/square foot x 180% yields a cost of $3.366 million.

B. Instrumentation Needs

The cost of scientific equipment needs to be determined on the basis of what each scientific discipline in the laboratory requires. Although the FBI's experience was that equipment costs about 75% of the building, this figure is not being used because substantial equipment already exists in the lab. Indeed, some equipment is not being fully utilized now due to lack of sufficient laboratory staff. In addition building costs in Alaska are higher than in the other states, whereas equipment costs will be increased by only the cost of shipment to Alaska. In addition some equipment can be used by more than one discipline in the laboratory.

Serology	Cost
Additional Incubator	$ 300
Additional Electrophoresis unit	1,200
Three large freezers	1,500
Medical Microscope	2,000
Balance	3,000
Subtotal	$ 8,000
Firearms and Tool Marks	
Stereomicroscope	$ 1,500
Bullets as reference samples	1,500
Subtotal	$ 3,000
Small Shop Area	
Hand tools, drill press, grinder, bench, firearms tools, etc.	$ 15,000

Toxicology (if located within the crime laboratory)

Additional Gas Chromatographs	$ 60,000
Coaximeter	5,000
Gas Chromatograph/Mass Spectrometer	225,000
Subtotal	$290,000

Trace Evidence

Polarizing Microscope	$ 20,000
Two Stereo Microscopes	12,000
Scanning Electron Microscope	115,000
Gas Chromatograph	15,000
Subtotal	$162,000

Forensic Chemistry

Liquid Chromatograph	$ 60,000
Ultraviolet Spectrophotometer	30,000
Infrared Spectrophotometer	30,000
Subtotal	120,000

Fingerprints (Automated system is funded through a separate appropriation)

Two Evidence Cameras	$ 1,000

Photography -(OL Photo Section upgrade funded through existing budget)

General Expansion-Additional cameras, related darkroom expansion Subtotal	$ 10,000
Instrumentation TOTAL	$609,000

C. Furnishings

The cost of furnishings of the FBI laboratory amounted to 15% of their total construction cost. Since some desks, cabinets, tables, etc., are already in the laboratory, a 10% of construction cost has been used.

Thus, $2.486 million construction cost times 10% yields approximately $.250 million.

D. Commodities - Estimated supplies to stock expanded laboratory $ 71,000

Recap of Estimated Costs
(In millions of dollars)

Construction	$3.366
30% DOTPF	1.100
Instrumentation	.609
Furnishings	.250
Commodities	.071
	5.396
12% Inflation per DOTPF	.647
Grant Total-New forensic facility	$6.043

E. Analysis

A proposed laboratory of about 17,000 square feet is a major undertaking. One may validate the size of the proposed laboratory by comparing it to the existing laboratory. The latter contains about 4,000 square feet for the present staff of 10 in Anchorage which is crowded and lacks certain essential areas. There is also additional space in the fingerprint section in Juneau. The space for these personnel and their operational area is approximately 1,000 square feet, including substantial file cabinet space, or a total of about 5,000 square feet of both operational and non-operational space at both locations.

The laboratory plan proposes an additional staff of eleven personnel, or essentially a doubling of the existing staff. By extension, a doubling of space is needed, plus the addition of a first aid room, library, computer room, firearms storage area and vehicle examination area. The existing laboratory has virtually none of these areas required of a full services laboratory.

Thus a doubling of the existing laboratory space of some 5,000 square feet to 10,000 square feet plus about 1,600 additional square feet for the above described additional non-operational areas, means the projected 11,250 square feet for a new laboratory is, if anything, conservative. This total area is seen as necessary for existing and proposed staff and support areas and makes no provision for expansion for future requirements.

It seems short sighted to not include space for future expansion. Such space would not be empty or lack for activity. This space could serve as a training center for police and prosecutors relative to forensic activities.

One can assume that the need for training is greatest now, simply because so little training now exists. Further into the future, as more police agencies receive training, the need for training should decrease, while as forensic examinations increase, the need for operational laboratory space will also increase.

It is acknowledged that the calculations of space and cost can only be estimates, by their very nature. However, they are based upon the known cost factors experienced by the FBI, with modifications for costs in Alaska and the values of existing laboratory equipment and furnishings.

F. Time Schedule

Construction of a Crime Laboratory obviously requires a legislative appropriation. Assuming a budget request is approved by the legislature for FY84 (July 1, 1983), there a number of phases or steps in the construction of a new building. Each can be expected to require a certain amount of time. The following is a rough estimate of the time required to complete construction:

Sept-Oct 1982	AST Project Director develops scope of the project with facility Planners of DOT/PF. Project scope reviewed and estimates of cost are completed. Submit for legislative approval.
Jan-May 1983	Legislative Session - approves or denies appropriation.
July 1, 1983	Assuming appropriation granted, DOT/PF prepares funding and project documents.
Oct 1983	Preliminary budget completed by DOT/PF.
Oct 1983	Advertise for design consultant.
Nov 1983	Select Consultant.
Feb 1984	Design completed and reviewed.

Feb	1984	Advertise for construction.
Apr	1984	Bid opening and award.
Apr-May	1984	Construction begins (may require more than one year).
Apr-May	1985	Constructed completed.
Jun	1985	Construction inspection.
Jul	1985	Construction deficiences resolved. Final inspection and approval. Acceptance by DOT/PF.
Jul-Aug	1985	Move-in and occupancy.

G. Recommendations:

71. It is recommended that the State Troopers develop and coordinate an aggressive program of support for constructing a full services statewide Crime Laboratory, leading to a legislative appropriation for FY84.

72. It is further recommended that a Project Director be named as soon as possible and that he be given written authority and responsibility for coordinating the entire project.

73. The Project Director should establish immediate contact with the State Department of Transportation and Public Facilities (DOT/PF) and work with their facility planners to develop the scope and estimated costs of the project, which according to DOT/PF must be completed in October 1982.

74. To the extent possible, the state should engage a design consultant who has had prior experience designing a forensic lab, or other laboratory related structure. Further, upon design completion and review by laboratory staff, it is recommended that the blueprints be reviewed by one or more lab directors and/or other authorities elsewhere to ensure the proposed structure will provide the most efficient and effective forensic laboratory for Alaska.