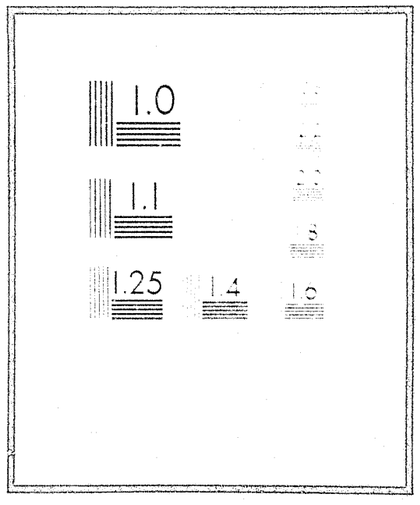

BEDFORD OPERATIONS

MTR-3287

A Program for Reducing the Abuse of Birth Certificates and Driver's Licenses as False Identification Documents

L.B. Collins
T.P. Kabaservice
C.F. Lowell
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JULY 1976

MITRE

MITRE Technical Report
MTR-3287

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THE MITRE CORPORATION
BEDFORD, MASSACHUSETTS

ABSTRACT

The Federal Advisory Committee on False Identification (FACFI) has recommended that, in order to combat crimes based on false identification, improvements be made to state systems of birth certification, driver licensing, and the correlation of birth and death records. This report presents a program for implementing these recommendations. Included are draft sections of model state vital statistics legislation and regulations, sample application and certificate forms, recommended license application procedures and types, and cost estimates for interstate correlation of vital records. These are contained in

- Report A - A Plan for Reducing the Abuse of Birth Certification
- Report B - Matching of Birth and Death Records
- Report C - Recommended Federal Guidelines for Improved Driver's License Security

PREFACE AND ACKNOWLEDGMENTS

The U.S. Attorney General established the Federal Advisory Committee on False Identification (FACFI) in November 1974 to study the growing national problem of the criminal use of false identification. During its study, the FACFI found that the source of much of the false ID problem is the abuse of birth certificates and driver's licenses - documents which are under the control of individual states. The FACFI recommended that improvements be made by the states to vital records and licensing systems in order to reduce the potential for such abuse and to improve the security and privacy of these important documents. (See FACFI Final Report, also issued as MITRE document M76-213, The MITRE Corporation, Bedford, Mass., July 1976.)

The FACFI leadership felt that these recommendations would be accepted by the states only if accompanied by detailed programs of action that are cost-effective and protective of individual privacy. The Law Enforcement Assistance Administration (LEAA) selected The MITRE Corporation, a non-profit research and development center, to prepare implementation plans for use by state governments. These plans are the subject of this report.

We wish to acknowledge the support given to this work by LEAA, and to express particular thanks to Mr. W.J. Merrill of the Advanced Technology Division of LEAA, who served as the Project Monitor for this effort. We also thank the following individuals for their expert advice and assistance:

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STUDY SUMMARY

Three separate areas of false identification were investigated; recommendations in each area are the subject of the three reports which follow.

Report A, "A Plan for Reducing the Abuse of Birth Certification," is addressed to a common starting point for false identities: obtaining a certified copy of the birth certificate of another person, or the alteration of significant data on such a certificate. A false birth certification can be used to obtain other official documents that lend credibility to the assumed identity. Recommendations to counter this abuse include:

- Model state legislation to confer a privileged status to files of vital records and to penalize fraudulent use of such records.
- Standard application forms for birth certification which require information to establish the applicant's eligibility to receive a certified copy under the provisions of recommended state laws.
- Secure forms for certified copies which resist attempts at counterfeiting and alteration and are amenable to strict inventory control.
- Standard information content and format for certified copies to simplify recognition of valid documents.
- Uniform levels of security for "short form" and "birth card" certified copies.

These recommendations reflect the best current practices in one or more states and are consonant with guidelines proposed by associations of vital records executives. Impact of the recommendations on state government operations and the general public is predicted to be mild. Initially higher rates of rejection of birth certification applications due to insufficient information will decrease with familiarity with the new procedures. Ultimately, the rates of rejection and errors should be reduced by the extra information on the application and the wide distribution of state fee schedules.

Report B, "Matching of Birth and Death Records," describes an efficient method for countering fraudulent applications for birth certificates of deceased persons. At present, such applications would probably be honored, because birth and death records are maintained separately and are generally uncorrelated. The report proposes a national procedure for transmitting notice of a person's death from the state in which the death is recorded to the decedent's state of birth. The necessary sorting of death information would be done by the National Center for Health Statistics, which currently receives death certificate information from all states for statistical use. To reduce costs of the program, correlation is proposed only for those birth records most likely to be abused by imposters, i.e., records less than 55 years old. The proposed procedure would require the consent of all states to sorting of records by the National Center and a modification in computerized death certificate data currently supplied by most states. Cost of correlating current death records with birth records is estimated as $320,000 per year, exclusive of software development for National Center computers to handle the sorting. The one-time cost of correlating old death records for persons who would be less than 55 years of age if still alive is estimated as $4.8 million, assuming that records are correlated only at the state level. To extend this correlation to local records offices that now issue birth certifications would involve an additional one-time cost of $2.5 million.

Report C, "Recommended Federal Guidelines for Improved Driver's License Security," examines present procedures for issuance of state driver's licenses and "state ID" cards, which presently serve as de facto personal identification documents. Current procedures for establishing the identity of license applicants are found to be very vulnerable to fraud; licenses that do not carry the photograph of the legitimate bearer are particularly susceptible to counterfeiting and use by imposters. The report's recommendations are directed toward improving the reliability of the driver's license as a voluntarily obtained ID, and include:

- Application procedures that require several independent means of identification of the applicant.
- The virtual elimination of "temporary" licenses, which are very easily abused.
- Use by all states of photo driver's licenses that are resistant to tampering.
- Interstate verification of transfer license applications.

These recommendations offer benefit to the general public, which will gain a document more useful for check cashing and other transactions. Secure, personalized documents also offer less risk of criminal use if lost or stolen. The extra cost of secure photo licenses can be recovered within a few years by a nominal increase in licensing fees.

Recommendations for further study contained in these reports include the development of a search and retrieval system optimized for state-level issuance of birth certifications from microfilm birth records (Report A). Efficient systems currently exist for computer-controlled microfilm search and display and for reproduction on a secure form; however, these capabilities must be combined to realize an optimum system. Report C includes a recommendation to study interstate verification of transfer license applications through the use of the National Law Enforcement Telecommunications System (NLETS). Use of this existing system could provide low-cost, high-speed transfer of licensing information between state motor vehicle agencies. The objectives of both recommendations are believed to be well within the state of the art.

REPORT A

A Plan for Reducing the Abuse of Birth Certification

SECTION I

INTRODUCTION

The Federal Advisory Committee on False Identification (FACFI) was created to study, characterize, and propose solutions to the false identification problem. The FACFI has identified the birth certificate as a prime source from which to establish a false identity and secure further false IDs. This problem has been characterized by FACFI and a number of solutions proposed.

The Law Enforcement Assistance Administration (LEAA), a member of FACFI, sponsored a study by The MITRE Corporation to investigate further those FACFI proposals directed to the filing and issuance of birth certificates and to help states improve their systems for the issuance and protection of birth certifications. Detailed plans for implementing the FACFI recommendations with respect to birth certifications are contained in this report. The elements of the plan are feasible and do not require either massive expenditures or severe dislocation of state operations. The proposed program should serve the legitimate interests of both state government and the private citizen.

The birth certificate is frequently used to establish a false identity. Since it can be used to obtain a variety of genuine identification documents in a false name, it is considered a "breeder" document. As outlined by Task Force 5 of the FACFI Committee (See Appendix A5 of the FACFI Final Report), the false ID problem associated with birth certificates can be described as the result of two fraudulent acts:

- Application fraud, in which a birth certificate is requested by an imposter claiming to be the person described on the certificate, and

- Use fraud, in which the imposter then uses the certificate as "proof" of identity.

Birth certificates can be applied for by mail or obtained in person at state, city, or county offices. Procedures, issuing authority, amount of information, and type of information required to obtain a certified copy of a birth certificate vary greatly from state to state. Statutes and procedures limiting access to the vital records themselves are not consistent. In many instances, no identification is required for access or to obtain a certificate. As a minimum, the information needed in the application is that

necessary to locate the document. At the other extreme, procedures and information are required which will allow for the determination that the requesting individual has a right under state law to obtain the certificate and that the individual is indeed properly identified. The application process further varies from state to state in that some states issue certificates only at a single state level while others have many points of issuance throughout the state.

A birth certificate is commonly and legally used to establish age, citizenship, and parentage of the individual to whom the certificate pertains. This is used to claim Social Security benefits, to obtain passports, and is sometimes necessary for school entrance, to secure employment, and for commercial or business purposes when one or all of these facts are required. Task Force 5 of the FACFI has reported that the total utilization of the birth certificate as an identification document is impossible to estimate. In the majority of cases, a birth certificate is considered a primary identification document in that no additional documentation is required. Since the certificate contains no information that would link the person it describes to the bearer of the document, it can easily be used by an imposter. This fact alone makes the birth certificate a document of major concern.

MITRE has found that at least three versions of certification (certified copies) of the birth certificate are issued by states. They are:

- A full photographic or typewritten version of the complete birth certificate.
- A "short form" version of the birth certificate.
- A "birth card" version of the birth certificate.

Intended use of these forms varies from state to state. Federal guidelines for form utilization do not exist. In some states, for example, the "birth card" is not considered a certified abstract of the birth certificate. The "short form" version is frequently viewed as a less personalized version of the full copy and may be used interchangeably. All states do not utilize all forms.

It appears clear that the fraudulent use of birth certificates can be effectively reduced only by simultaneously addressing:

- The application process for birth certification.
- The form itself.
- The use of the birth certificate as an identification document.

SECTION II

CONCLUSIONS AND RECOMMENDATIONS

The need exists for a systematic and consistent approach to limiting the false use of birth certificates. Three primary areas of birth certificate utilization must be addressed:

- Obtaining the birth certificate of another person through false pretense.
- Counterfeiting or altering a birth certificate.
- Using a birth certificate fraudulently.

If steps are not taken in each of these three areas to decrease such false use of the birth certificate, fraudulent users will simply choose the method not addressed. In addition, an overall legal context for penalizing the false use of birth certificates must be instituted, which should diminish false use by increasing the legal risk of such activities. To effectively counter and penalize this activity, it is recommended that:

1. Legislation be enacted to restrict access to vital records.
2. The physical security of vital records be assured.
3. Control over issuance of birth certification be improved.
4. Application forms for birth certification be standardized.
5. Certificate forms utilize unique, controlled safety paper with special printed identifiers.
6. Full certified copies contain standard information and format.
7. Blank forms be controlled and pre-numbered.
8. The legal status and level of security for short forms and birth cards be standardized.

9. States adopt federally recommended, issued and regulated standard certificate forms.

10. Direct agency to agency interchange of data (to verify facts of birth) be encouraged, i.e., vital statistics office to passport office, vital statistics office to Social Security, etc.

Each of these recommendations is discussed in detail in this report and proposals are given for their implementation. Problems that may arise from their implementation are also outlined.

PROTECTION AGAINST IMPOSTURE

In this section recommendations are made pertaining to imposture, i.e., the presentation of a birth certificate by an individual falsely purporting to be the documented individual. This section is concerned specifically with the misuse of a genuine document obtained by false pretense. Specific problems related to "false" documents - counterfeited or altered - that either create a false identity or allow assumption of someone else's identity are discussed in subsequent sections.

Vital records are a peculiar form of record; they are neither completely public nor completely private. In a sense, they are a public record of a private event. They do not share the inherent personal privacy of, for example, a medical record; at the same time they are not a record of "public business" to which the public is entitled, nor a record of information collected and recorded by a public agency. They have been held by the courts to be "public documents of a priveleged nature." The statistics derived from such record are, however, public information. Birth certificates also contain a confidential section containing medical information and personal family background data. Access to this record could disclose illegitimacy of registrant, birth of older illegitimate children to same mother, birth defects, or maternal venereal disease. It should be made clear that in all discussion of vital records, the confidential section of the record is privileged and is not included in normal disclosure and copying procedures. It appears that the value of total and uncontrolled public access to vital records is outweighed by the negative impact on society and the individual resulting from misuse of such records.

The potential for misuse lies not only in the use of birth certificates for establishing identity, but also in the obtaining of data from other records to use in false application for birth certificates. For example, infant death records can be used to find birth dates and other facts needed to apply for birth certifi-

cates of dead individuals, while marriage records can be used to buttress false claims for insurance, Social Security benefits, and others. For this reason, access to all vital records must be controlled if misuse is to be minimized.

Freedom of Information (FOI) laws have been passed by the Federal government and many states granting public access to public records. In most cases, these laws permit any person to obtain a copy of any record, except as excluded by other statute. Vital records may or may not, according to local variation in the law and local adjudication, be included as open public records. If misuse of vital records is to be curbed, it is clear that statutory action is necessary where not already applied. Current statutes must be modified to apply restrictions to all vital records, or state legislatures must pass comprehensive vital statistics statutes.

Protection against imposture will rely on implementation of recommendations regarding:

- Statutory basis for access control
- Physical access to records
- Centralized state issuance of birth certificates
- Information requirements for application

Statutory Basis for Access Control

Recommendation

Legislate action to restrict access to vital records (FACFI Proposed Solution No. 1).

Proposal

State legislatures should pass new legislation or amend existing statutes to restrict access to vital statistics records. Such restrictions should include the following:

1. Provision of privileged status for birth records less than 100 years old and for death, marriage and divorce records less than 50 years old.

2. Issuance of certified copies of records only to individuals having a "direct and tangible interest" in the specific records.

3. Limiting access to privileged records to employees of the recording agency.

4. Regulation by the state registrar of use of vital statistics for research purposes.

5. Provision of appropriate penalties for misuse of privileged records.

These provisions are contained in the most recent version of the Model State Vital Statistics Act. This Model Act which was developed by a panel of state vital registration officials under the sponsorship of the Department of Health, Education and Welfare, is included in its entirety on Attachment I of this report. Model state regulations to implement the provisions of the Act are included in Attachment III.

Impact

1. Most states presently employ some form of restriction of physical access to vital records. The suggested Model Act and regulations, if enacted by all states, would provide a uniformly privileged status for records that are likely to be abused for false identification. The recommended restrictions will normally be acceptable to the general public.

2. Of special importance in the control of access to birth records is the fact that the original records contain confidential sections which can be disclosed only under very restricted circumstances. This information must certainly be protected from access by "casual browsers" or by investigators who do not have rights to the confidential data in the record.

3. Genealogists and other researchers may be given access to records of a specified age, i.e., birth records older than 100 years or death and marriage records older than 50 years.

4. State legislatures considering changes to existing statutes or a new comprehensive statute would be aided by a concise statement of the problem of false identification, the cost to society and the state, and the relationship to access to vital statistics. The need for vital records protection should be clearly stated and model legislation suggested. The FACFI report(s) can be used to aid this process by providing information for an "information kit" which could be communicated to state legislatures by appropriate in-state agencies seeking new legislation.

Physical Access to Records

Recommendation

Assure physical security of vital records (FACFI Proposed Solution No. 2).

Proposal

States or other registries that do not currently have adequately secure facilities and procedures should adopt appropriate measures to meet or approach a common standard. It is recognized that:

1. Many registries have already implemented appropriate procedures and facilities.

2. Each registry's facilities must be designed to meet local conditions and existing local structures.

Within these limits, it is proposed that registries adopt a physical layout functionally similar to that shown in Figure 1. Within this facility, it is proposed that:

1. The general public be limited to the area outside the counter and their requests be served completely by the record clerks.

2. A special room service cases in which a clerk may wish to discuss special problems with an applicant.

3. A special room be made available to genealogists and other researchers. Preferably, they would request records from the clerk and work on them in this room. This area can be used for access to records which have become public by virtue of age.

4. Secure storage facilities be maintained for off-hours storage of certificate forms and any other sensitive material.

Impact

1. Alteration of facilities may require some additional expense; however, the total cost should be reasonable.

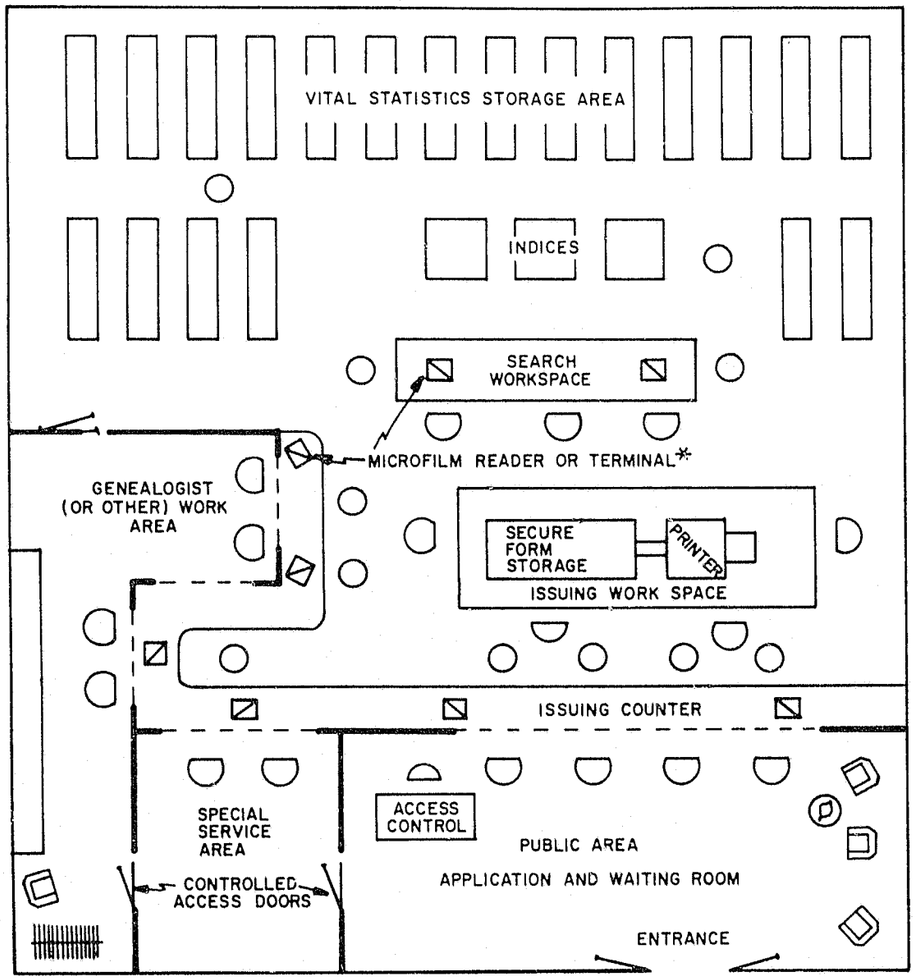

Figure 1. Model Vital Statistics Office

2. Since users may be irritated at changes in their access to records, every attempt should be made to educate them as to the reasons for changes and the importance of assuring the legitimacy of record use. The public should be assured that no barriers are being placed in the way of obtaining legitimate record copies, and research or other interests should be aided in obtaining legitimate access.

Centralized State Issuance of Birth Certificates

Recommendation

Improve the control over issuance of birth certificates by centralizing issuance at the state registrar or by strict state regulation of issuance at local offices (FACFI Proposed Solution No. 47).

Proposal

Vital records are traditionally kept at both state and local (county, township, city) registries; in many states, certified copies are issued from both locations. In order to provide protection against issuance of birth certificates to improper parties, it is proposed that all issuance of certified copies be made by the state registrar's office either in person, or by mail.

Alternatively, the local offices would continue to issue certificates but under strict regulation and control by the state registrar, who would supply forms, issue regulations, and audit procedures. At present, many states have strict regulations for the issuance of birth certificates that apply to all issuing offices. However, it is difficult to properly control such issuance and assure that regulations are being met when as many as 1,500 local agencies are involved, each with a great variety of size, volume of applications, and professionalism of personnel. In many states, the local agencies do not use the same forms as the state, or each other, and may not follow the same rules for application. The most effective solution appears to be centralized issuance.

Impact

1. In many states there is a tradition of issuance by local county or town officials. In addition to the convenience afforded to the applicant by local application and issuance, there may be a perception that both prestige and income are attached to the right of local issuance (in fact, the real cost may be higher than the income in small

offices). To some extent, this local function can be retained by having application forms available at local registrars as well as health departments and clerk's offices. These offices could assist the applicant in proper preparation of the application.

2. Centralized issuance will probably be slower than local issuance; if quick service is of sufficient value in a given area, local issuance with state control may be more suitable.

3. Centralized issuance may require legislation in many states, which could be proposed simultaneously with a request for statutory authority to restrict access to vital statistics records. In this way a consistent "case" can be presented to the legislature.

4. It must be emphasized that no procedures for protecting the integrity of birth certificate are going to work if they can be circumvented simply by dealing with local agencies that are not bound by regulations and procedures employed at the state level.

Information Requirements for Application

Recommendation

Institute national standard application forms for birth certification (FACFI Proposed Solution No. 58).

Proposal

Most agencies presently issuing birth certificates honor applications containing only minimal data (for example, name of person on certificate, place of birth and data of birth). Imposters are able to locate such limited information easily. In particular, the fraudulent applicant need only obtain data from a death notice, newspaper article, or other easily available source, to fill out an application or mail an unsigned letter request for a certified copy. We propose that a standardized application form for birth certification be adopted that includes:

1. Full name at birth
2. Date of birth
3. Sex
4. Place of birth (town, hospital)
5. Information on father (full name, place of birth)

6. Information on mother (maiden name, place of birth, street address at time of birth).
7. Information on person making request (name, address, signature).
8. Purpose for which copy is requested.
9. Applicant's relationship to person named on certificate.

It is proposed that parents' full names, parents' places of birth, and mother's maiden name, be included on any application for a certified copy of birth record. Such data is difficult to get and the total package of data is unlikely to be known to another person not related to the individual in question. States should honor only those requests containing a sufficient subset of information, i.e. more than that which could be readily obtained by any individual from a source such as the obituary columns. The request should, however, always clearly identify the requestor and his relationship to the person whose certificate is being requested.

The request can be returned to the applicant if there are mistakes or completely insufficient information. If the applicant cannot supply all the required data, he can be handled as a special case at the registrar's office or possibly at local offices. If he can satisfy the clerk of such office, in person, as to his identity, the clerk would process the application with a special identity voucher section allowing reduced information. Mail applications would be restricted to the required data. It is envisioned that standard forms could be made available at local health departments, county clerks, city halls, etc. The proposed format is given in Figure 2. A list of addresses of issuance offices in all states should be supplied at each such location.

Impact

1. Many applicants may not be able to supply all the required information. This may result in an increased volume at rejected applications; on the other hand, many applications are presently rejected because of insufficient information. The standardized application may reduce such errors.

2. The use of a national standard form will ease the problems of a resident of one state applying for a certificate from his natal state. Local offices in the home state will have the proper form, be familiar with application requirements, and will know the proper address for application (from the list of state issuance offices).

REQUEST FOR COPY OF BIRTH CERTIFICATE

Mail request with fee or bring to:
(name) ____ STATE DEPT. OF HEALTH
Public Health Statistics Section, Room ____
(address)

PLEASE PRINT

I. BIRTH CERTIFICATE OF:

FULL NAME AT BIRTH			FATHER'S BIRTHPLACE *(Town)*
DATE OF BIRTH	SEX	MOTHER'S MAIDEN NAME	MOTHER'S BIRTHPLACE *(Town)*
PLACE OF BIRTH *(City, County, State, Hospital)*		RESIDENCE OF PARENTS AT TIME OF THIS BIRTH	

II. PARENTS OF PERSON NAMED IN BIRTH CERTIFICATE

III. PERSON MAKING THIS REQUEST

Your Name		NUMBER OF COPIES WANTED	
Your Address *(No. and Street)*		FEE ENCLOSED *(See Fee Schedule)*	$
(Town, State)	*(Zip Code)*		

For the protection of the individual, certificates of vital events are **not** *open to public inspection.*

The following must be completed in order to permit this office to comply with the request.

RELATIONSHIP TO PERSON NAMED IN CERTIFICATE *(e.g., parents, attorney)*	FOR WHAT PURPOSE DO YOU NEED THIS COPY?

Your Signature ▲

Warning: False application for a birth certificate is punishable by up to five years in prison and/or $10,000 fine.

Figure 2. A Model Application Form For Birth Certification

3. This proposal is closely tied to more restrictive legislation since, if no restriction is placed on issuance of certified copies, or access to original records, then an application form cannot insure that the applicant is properly identified.

PROTECTION AGAINST COUNTERFEITING AND ALTERATION

This section contains recommendations pertaining to the problem of false documents that are either falsely created (counterfeited) or altered. When the procedures to obtain genuine certificates are tightened, it is likely that counterfeiting and alteration will increase. Methods are proposed that will protect against counterfeiting and alteration of a "certified copy" of a birth certificate. Figure 3, which is a prototype certified copy derived from a form developed and manufactured by the American Bank Note Company for the Commonwealth of Virginia is included here for reference. Information content was derived from certificate data utilized by the Commonwealth of Virginia and from the U.S. Standard Certificate of Live Birth (Public Health Service form PHS-796). It must be noted that Figure 3 is for illustrative purposes only; many of the safeguards proposed are, by design, not possible to duplicate.

Counterfeiting and alteration of certified copies of birth certificates can be reduced by implementing the recommendations discussed below, which are offered here as a package. They are in many respects integral to and dependent upon one another; therefore, an overall design is necessary. Any implementation of a subset of these recommendations should be closely examined to assure that the integrity of the entire document still stands.

Proposals in this section relate to both the full certified copy of a birth certificate and to abbreviated forms, which are to be considered as certified copies.

Creating "Secure" Certified Certificate Forms

Recommendation

Prepare certificate forms utilizing unique, controlled safety paper with special, printed identifiers (part of FACFI Proposed Solution No. 2).

Proposal

In order for security features to be applied to all certified certificate forms, it is proposed that:

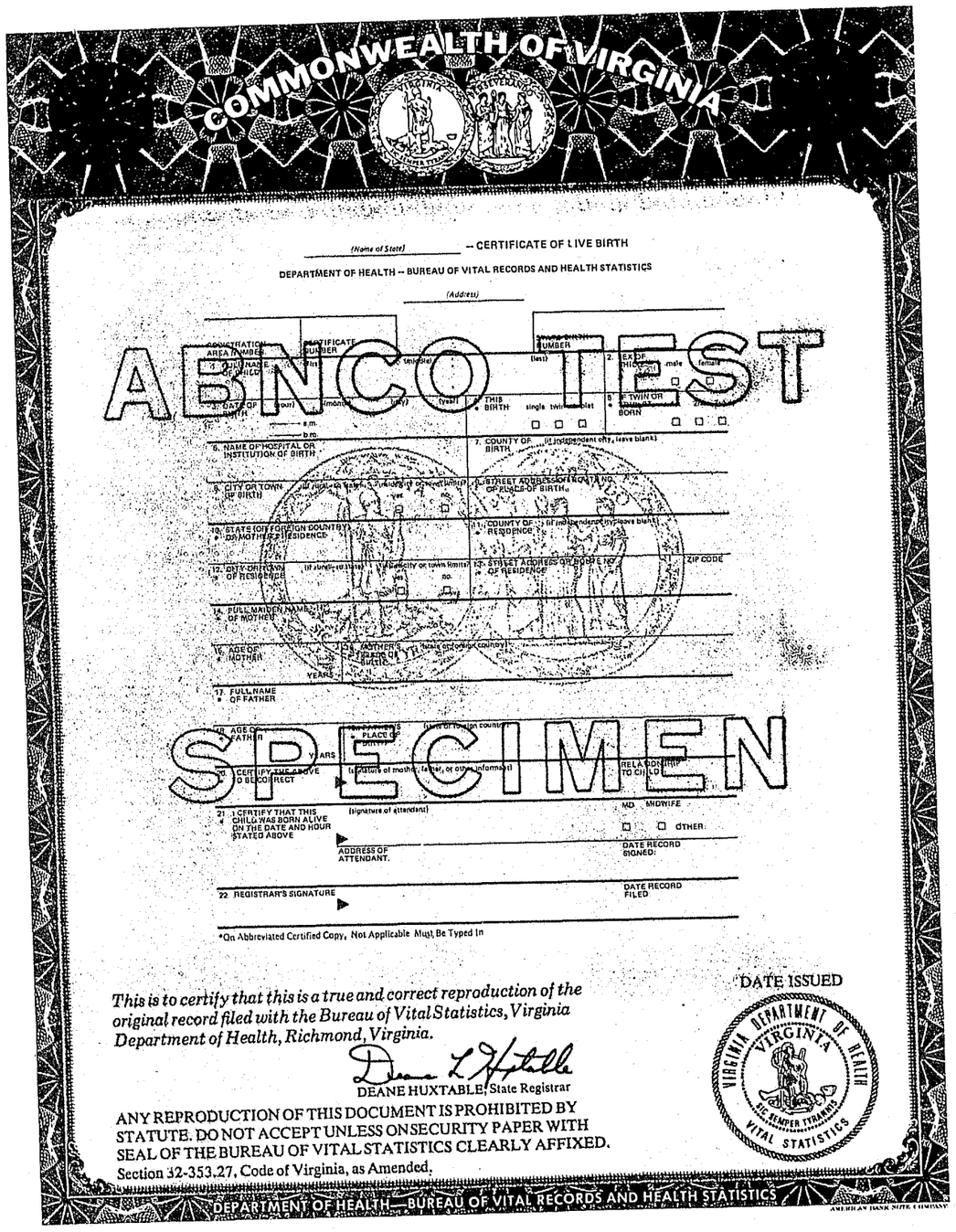

Figure 3. Sample Form And Format For Certified Copy of Birth Certificate (derived from form used by Commonwealth of Virginia).

1. Forms be prepared on special "safety" paper.
2. Unique "safety" features be utilized and utilization limited.
3. Certified forms with special identifiers, hidden monograms, and identifying raised borders be preprinted.

All certified copies of birth certificates should be prepared on paper that contains "safety" marks that are difficult to alter or reproduce. These marks are in the background area of the sample form in Figure 3. Alteration is made difficult by the fact that any attempted alteration will mask or alter the "safety" features. Counterfeiting would require complete duplication of the "safety" features as it is recommended that the paper utilized not be made available except for the purposes of certified birth certificates. Cost of this paper is only a few cents more per sheet than that of ordinary paper. Some states presently use only ordinary paper for these forms, which allows the name of a person to be "whited out", the blanked form reproduced, or a false name appended. While "safety" features are an aid in preventing counterfeiting, utilization of this paper might increase attempted counterfeits because alteration would be so easily detectable.

Because safety paper is presently available from many sources, a unique safety paper should be used for the production of certified copies of birth certificates and its production should be controlled. Uniqueness aids in verification at the point of inspection and could be made extremely cost-competitive by the implementation of a national standard. Limited utilization and availability makes counterfeiting difficult.

Certified copies of birth certificates should be prepared on preprinted forms that incorporate unique printed features. Preprinted forms should utilize special identifiers, hidden monograms, and raised borders produced by sophisticated reproduction techniques, and hidden image printing techniques should be used in selected areas. Selected legends and margins should be comprised of closely spaced lines, differing color intensities, and identifying monograms. Intaglio printing that will produce selected images in relief should also be utilized. Raised seals or multi-colored dry stamp seals may be added at the time of certification. Salient and important features can readily be incorporated to aid in the inspection or verification process.

Referring to Figure 3, special identifiers are visible in the form of the seals at the top and in the center, etc. Hidden monograms, which cannot be reproduced here, appear in the top left and right circles; on the original they may be viewed only at oblique angles.

Raised printing is used for the closely spaced lines comprising the design in the border area. Differing color intensities are used on the printed form.

There is little uniformity from state to state in present birth certificate forms insofar as safety features and identifiers are concerned. Forms vary from those that are extremely simple to those that approximate the recommended form shown in Figure 3. While costs of a few thousand dollars would be incurred in the initial set-up for these certificates, they could be spread over a large number of applicants. For those states presently using preprinted forms, this recommendation does not appear to appreciably increase the per-unit or per-volume costs. For states presently using simply prepared forms, per-unit costs may be approximately 25¢.

Impact

1. The introduction of safety features and unique identifying characteristics into the certified birth certificate forms will increase the probability of attempted form theft. This concern is discussed under the section on controlling forms.

2. When a person requests a birth certificate, he receives a certified copy which is derived from the original official copy. The copy which he receives may be prepared by manual script or printing on a form, a Xerox copy of the original, a microfilm reader output of the original, or by computer printout. The proposal contained herein appears compatible with these methods of certified certificate issuance with the possible exception of methods presently used to obtain certificates from a microfilm reader output. Where a certificate so obtained is photographic in nature, the safety features proposed cannot be used. Photographic copies are easily altered by photographic methods. Compatibility with our proposal is possible by introducing a Xerox-type copying procedure of an illuminated microfilm copy. Xerox machines exist which are compatible with our recommended form and capable of accepting microfilm source input. Roll-fed or card inputs may be used at a cost of from 4¢ to 6¢ per hard copy output.

Creating Uniformity in Certificate Data

Recommendation

Prepare certified certificates using standard information content and format (part of FACFI Proposed Solution No. 2).

Proposal

Use format and information such as that shown in Figure 3 for all certified copies of birth certificates. The following 11 items should appear on any form issued as a certified copy of a birth certificate:

1. Certificate number (Birth Number)
2. Full name of Child
3. Sex of child
4. Date of birth
5. Name of hospital
6. County and state of birth
7. City or town of birth
8. Street address of place of birth (if not hospital)
9. Date filed
10. Registrar's signature
11. Date of certification

The following additional information could be contained in the full copy:

1. State or foreign country of mother's residence
2. County of residence
3. City or town of residence
4. Street address of residence
5. Full maiden name of mother
6. Age of mother
7. Mother's place of birth
8. Full name of father
9. Age of father
10. Father's place of birth
11. Informants signature
12. Attendants certification

Confidential information such as race, education, birth order, medical data, etc., is not proposed for any certificate copy. The abbreviated copy would be identical to the full certified certificate except that personal information on parents would be omitted. This proposal is compatible with the U.S. Standard Certificate of Live Birth, Public Health Service Form 796.

Because many different formats and information contents are presently used, it is extremely difficult to readily identify a fraudulent birth certificate. Standardizing to a minimum content will simplify the inspection procedure. The utilization of

a standard data format and information content is also mandatory to make optimum utilization of recommended preprinted form features.

Impact

1. The use of a standard data content and format reduces the variables from state to state. This allows for an easier inspection of certificates. However, widespread use of a single format might encourage counterfeiting attempts, so secure forms must be provided.

2. It should be recognized that general use of a standard format will probably occur gradually over many years. Copies will continue to be made from old original certificates that do not follow the standard format. However, even these copies can be made on secure forms.

Controlling Certificate Forms

Recommendations

Pre-number and control blank certificate forms (part of FACFI Proposed Solution No. 2).

Proposal

The introduction of security and uniqueness into the certified birth certificate form will increase the probability of attempted form theft. Pre-numbered and tightly controlled blank forms will help prevent theft and facilitate audit and control procedures.

At the present time not all states utilize a pre-numbered form; many of those that do report that pre-numbering and control have not significantly increased costs. Pre-numbered blanks are, however only as useful as the control and storage features implemented in conjunction with this feature. Numbered blanks must be controlled from the point of origin to state offices, and within these offices, up to the time of issuance to individuals. Relatively straightforward security procedures must be used to guard all blanks and appropriate auditing techniques must be used to detect and deter improper avaialability of forms.

Impact

1. Control of waste matter will require procedures and training of personnel; for example, copies created in error and discarded will have to be accounted for.

PROTECTION AGAINST MISUSE

Through improvements in application, issuance, and security of forms, the possibility is minimized of an individual's obtaining the genuine birth certificate of another person or attempting to counterfeit or alter documents. The likelihood of an agency accepting such documents must now be decreased. The following recommendations are concerned with protection against misuse of birth certificates. A concomitant effort must be made to legislate against fraudulent use; to clarify and define the status of birth certificate documentation in relation to other documents and to proper usage; and to educate personnel in the "using" agencies to understand and apply procedures related to the other recommendations made in this study.

It is recommended that Federal and state legislation be adopted to penalize misuse of birth certificate documents as discussed in the FACFI Final Report and as recommended in Attachments I and II of this report. Statutes should include statements such as:

> "Any request in the form of an application, and/or such certified copy that is issued upon request in any form shall contain explicit warnings, conspicuously displayed, that willful and knowing falsification of information on an application, and/or willfull and knowing possession or use of a copy with knowledge that it contains such false information, shall be cause for criminal liability, etc., etc..."

Limitation of Certificate Forms

Recommendation

Standardize legal status of short forms and birth card use. (Not discussed by FACFI.)

Proposal

Many states presently issue "short forms" of birth certificates, or "birth cards," or both. These forms generally contain less information than a full certified copy and sometimes are not certified. Their legal and practical status varies from state to state.* It is

*Based on a survey of "birth cards" conducted by Mr. Irvin G. Franzen, Department of Health and Environment, Kansas. He is also president of American Association for Vital Records & Public Health Statistics.

proposed that the short forms and birth cards, if issued, be standardized to be legally and functionally equivalent to a full birth certificate. The short form, an abbreviated version of the full certified copy, can be made using the same form used for the full copy (see Figure 3) but using the insertion "Not Applicable" in areas where parental information would appear.

It is extremely difficult to regulate or educate all "users" of birth certificates. In a situation where many forms of birth certificates are issued, the user tends to accept any form, even if that form is not a certified copy. State procedures vary regarding the degree of certification of the short form/card and the difficulty of obtaining one. The intent of this proposal is that any form issued by a state registrar that appears to be a certified copy is, in fact, certified and is issued only to persons meeting the requirements for receipt of a certified copy.

Impact

1. From the point of view of minimizing misuse of birth certificates, it would be desirable to eliminate both short forms and birth cards - i.e., to have only one, secure, well-known, controlled form of certificate. However, both abbreviated forms appear to be useful in various ways and have gained broad acceptance. Short forms may satisfy the information requirements for most uses of birth certificates without displaying data, such as parents names, place of birth, etc., which the holder may not want known to other parties. Short forms might reduce preparation time and cost, although significant net gain over a standard long form is doubtful if both forms are used. In view of the utility of the short form, and the argument that suppression of parental data is sometimes in the interest of the registrant, it is recommended that such forms continue to be used. However, the requirements for short-form certification should in all cases be the same as those for a full certified copy.

2. The very convenience of birth cards has led to their frequent use as personal identification. This is unfortunate, because like other forms of birth certification, the birth card contains no physical description of the person whose birth it verifies. Because of their size, and the tendency to carry them on the person, they are easily lost, stolen or loaned; when so obtained by another person the card can easily be misused. Birth cards are usually more expensive to issue than other types of cer-

tification. Because of those factors, it is recommended that their use be superseded by state-issued photo ID's such as the driver's license or "age-of-majority" card. These documents can be made more secure against use by imposters. Security and identification requirements for state-issued ID's are discussed in Appendix D3 of the FACFI Final Report. Recommended identification of applicants for these documents would include a certified copy of the birth certificate, plus independent corroborating evidence of identity.

Adoption of Federally-Supported Standard Forms

Recommendation

States adopt standard forms developed, regulated, and possibly issued by the Federal government (not discussed by the FACFI).

Proposal

Currently each state uses one form for a certified copy of a birth record and another for a birth card, if issued. In addition, within some states, local agencies issue different forms. It is proposed that the Federal government develop a standard, high-security form that would incorporate the needs of the various state registrars. This form could be produced under Federal funding and control and be made available to the states at nominal or no cost. A serial numbering system would provide both Federal and state control and auditing capability, although states could also apply a local numbering or control procedure. Paper stocks and printing of such forms should be under tight Federal security.

Impact

1. This proposal would obviously require modification of procedures in every state; however, it is felt that the extent and cost of these modifications would be minimal. In a questionnaire involving standardization of birth card forms, the bulk of responses by state registrars implied that the states would not object to such a standard form if it did not involve a Federal identification system.

2. States use a wide variety of methods for producing copies of birth records. It is assumed, however, that a form can be designed that is adaptable to all state requirements. One state is presently using a high-security form

which is intended for use both with electrostatic copy and computer output. If a state wished to hand print or type information onto such a form, it could overprint a format onto the standard form or have the form printed originally with such information.

3. It should be noted that the Federal government, as one of the principal "users" of state birth certificates (i.e., for passport issuance, immigration, military enlistment, employment, etc.) has an interest in supporting the states using standard forms.

4. As an alternative to this proposal, the Federal government could provide guidelines, standards, and technical support for nationwide standard forms, which would then be produced and controlled by each state.

SECTION III

DISCUSSION OF PROBLEMS IN INSTITUTING CHANGES

ACCESS TO VITAL RECORDS DATA

The basic problem in limiting the use of vital statistics information to prevent false identification is one of balance between three conflicting interests:

1. The private and public interest in maintaining "open" public records which might be subject to misuse by the state.

2. The public interest in preventing the misuse of public records by individuals attempting to establish a false identity.

3. The private and public interest in assuring that obtaining or issuing a certificate or copy is not too expensive in time or money for the issuer or issuee.

The spectrum of current practice regarding access is illustrated by two adjoining states - Massachusetts and Connecticut. In Massachusetts, the records are considered basically open and subject to public scrutiny and copy; in Connecticut they have been considered closed and issuance of a certified copy of birth records is controlled by statute. (Many states have adopted stricter statutes based on the Model Vital Statistics Act.) Connecticut procedures also illustrate another factor in the issue of public access; marriage and death records, previously considered closed, have been opened by the Freedom of Information Commission following Connecticut's new FOI statute. This case is being adjudicated, and the final outcome is unknown; however, specific legislation may be required if marriage and death records are to be protected, as birth records are, by statute.

A clear distinction must be established between verifying the existence and content of a birth record and obtaining a <u>birth certificate</u>, which can be used to obtain privileges and other official documents. If adequate vital records legislation has not been passed and it is necessary, under existing vital record and Freedom of Information (or other public access) laws, to provide record information to the public, it should be done using a special form for record verification, containing data necessary only to locate and identify the record and labeled, for example, VOID AS IDENTIFICATION

OF BEARER: FOR INFORMATION PURPOSES ONLY. It should be impossible to interpret this form as a birth certificate.

Misuse of birth certificates can also be reduced simply by decreasing the number of birth certificates in circulation, thereby decreasing the potential for stolen or altered certificates and allowing registries to apply more resources to processing each application. A move in this direction would be to institute procedures designed to reduce the need to obtain and show a birth certificate in order to become eligible for government services such as welfare, schools, pensions, employment, etc. If the need for birth record information in such cases could be filled by inter-agency transfer of information (from registrar to using agency) rather than requiring the applicant to produce a birth certificate, the number of certificates issued would be reduced. The potential for fraud, through use of false certificates in application for services, might also be diminished by taking the applicant out of the information transfer process. To protect rights of individual privacy, such transfer should require the written consent of the applicant to release the data. The form sent to the requesting agency should also be labelled to preclude its use as a false ID. In many states this form of data transfer may require institution of new procedures for reimbursing the registrar's office for time spent in search and data preparation; otherwise, income-producing applications may receive priority, delaying inter-agency transfers.

APPLICATION

Recommendations of improved methods of applying for birth certificates (to insure that the applicant is eligible) are clearly related to the legal basis for application. If the birth record is considered completely public and available to anyone, then the application need contain only enough information to identify the desired records; this is essentially the current practice in some states. If the statutory basis requires that certificates be issued only to the recorded individual (or some other specified person such as a guardian or attorney) then clearly the application must, in some way, provide assurance that the applicant is legally eligible.

The most practical way of assuring identity is to include on the application required data that can be known to the proper applicant but which would be difficult for an improper applicant to obtain. Such data can include: parents' place of birth, mother's maiden name, birth order, etc. The disadvantage of requiring such data is that a higher percentage of applications, particularly those submitted by mail, must be returned for additional data. Some legitimate applicants may not know or remember all the required data, and these cases

will require special handling. It has been suggested that minor errors or omissions in application be tolerated as long as correct information is supplied beyond that probably available to an imposter using newspaper accounts or similar records. An opportunity should be provided for individuals whose applications have been rejected to establish their eligibility for certification through a supplemental application or personal appearance at a local registry. Final recourse through a court order would still be available after a second denial.

FORMS

The basic thrust of recommendations concerning forms themselves is:

- To simplify the type and style of forms to a minimum number,
- To make the forms as secure as possible against alteration and counterfeiting, and
- To ensure that all users (agencies requiring vital record information) understand the appropriate uses and inappropriate uses (i.e., for identification) of birth certificates.

Secure, national standard forms will aid all of these purposes. Ideally, one certificate form could serve most users. If short forms and/or birth cards are acceptable to user agencies, and their convenience is considered worth the maintenance of multiple form types, then an approach that might be considered is to standardize the short form or card as the normal certificate form, with the addition of a standardized, secure supplemental or trailer form. The second form would be issued on request by the applicant only in conjunction with the normal form and would serve the applicant in special circumstances where additional information is required.

No technical problems are foreseen in applying a secure form to certificates produced by xerography, typewriter, computer printer, or other conventional reproduction methods. There is a special problem, however in copying microfilm data, where at present photographic processes are used. It is considered technically feasible, within the current state-of-the-art, to develop special output devices to convert a selected microfilm record into a printed or xerographic image on a secure form. A federally-sponsored development effort in this area might be appropriate.

USE AND MISUSE

It is not only fraudulent use of the birth certificate itself which is costly to society, but also its use in obtaining other documents which are of value to the perpetrator. The use of birth certificates in establishing identity is both confusing and controversial. Many state registrars protest, "the birth certificate is not an identity document" and will describe other agencies as "naive" in the way they use certificates. These statements have a large measure of truth; however, the reality is that birth certificates are used to establish identity, just as driver's licenses, over the protests of motor vehicle administrators, are used as identification cards.

Considering the processes of birth certificate application and issuance alone, all that can be done is to minimize the chance of an individual having a certificate which is false or improperly obtained. From the overall point of view of minimizing false identification, a program of clarification and education is necessary to prevent the misuse of birth certificates. User agencies at every level must be clear about exactly what the certificate means. Basically, until a superior overall identification system is developed (and that may not be feasible), the birth certificate simply certifies that the data on the document is true and relates to the named individual; it does not in any way indicate that the individual presenting the certificate is the named individual. It does not appear feasible, however, to include data that can be used to positively identify the individual. Fingerprinting at birth has been proposed but would certainly be cumbersome and is of doubtful reliability. Otherwise there is little to relate the presenting person with the baby whose birth is recorded on the birth certificate.

The capability of a using agency to properly evaluate the authenticity of a presented document can be considerably enhanced by the use of standardized forms, particularly if the standards are applied nationwide and combined with education in anti-counterfeit and anti-alteration measures. Certainly the present profusion of forms carrying varying degrees of certification aids the person establishing false identification.

ATTACHMENTS

MODEL ACTS AND REGULATIONS

In the attachments are several proposed model acts and associated regulations which illustrate the statutory base required for adequate protection of vital records against misuse. Many of these measures are currently in force in state statutes; however, a comprehensive set is in effect in only a few states. The attachments include:

I. Model State Vital Statistics Act, Proposed Revision, November 24, 1975. PHS Document No. 46817 (DRAFT)

This model has been prepared by a Technical Consultant Panel, composed of state vital registration executives and sponsored by the Department of Health, Education and Welfare. Intended to supersede Model State Vital Statistics Act of 1959, PHS Publication No. 794, 1960.

II. Proposed Amendments to Model Act

Prepared by the Department of Justice in 1974, these amendments to the above Model Act are intended to protect vital records against misuse. An analysis of the amendments is included. Some have been included in the Model Act.

III. Model State Vital Statistics Regulations, Provision Final Draft, 8-7-73, PHS Document No. 616.6

Those sections pertinent to control of birth certificates are exerpted from a provisional final draft of model regulations prepared by the Department of Health, Education and Welfare. These regulations accompany the Model Act given above.

ATTACHMENT I

MODEL STATE VITAL STATISTICS ACT

Model State Vital Statistics Act. Proposed revision by the Technical Consultant Panel MODEL STATE VITAL STATISTICS ACT and REGULATIONS, Document No. 648.7, November 24, 1975, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE.

TECHNICAL CONSULTANT PANEL

on

MODEL STATE VITAL STATISTICS ACT AND REGULATIONS

Charge

To undertake a comprehensive review of the Model Vital Statistics Act: 1959 Revision, and develop revised languages as need to meet current requirements of the U. S. Vital Statistics System.

Structure

Consists of five members, including the Chairman, selected in terms of their detailed working knowledge of both law and vital registration practice in State and local jurisdictions.

MEMBERS

Mr. Donald J. Davids, Chairman, and Chief, Records and Statistics Section, Colorado State Department of Health, 4210 East 11th Avenue, Denver, Colorado 80220

Mrs. Hazel V. Aune, Valley View Road, Route 1, Verona, Wisconsin 53593 (formerly Chief, Registration Methods Branch, Division of Vital Statistics, NCHS:DHEW)

Mr. Irvin G. Franzen, Director, Registration and Health Statistics, Kansas State Department of Health, Topeka, Kansas 66603

Miss Martha H. Pattillo, Assistant Director, Vital Records Unit, Department of Human Resources, 47 Trinity Avenue, S.W., Atlanta, Georgia 30334

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Staff Resource

Mr. Loren E. Chancellor, Chief, Registration Methods Branch, Division of Vital Statistics, NCHS.

Mr. George A. Gay, Public Health Analyst, Registration Methods Branch, Division of Vital Statistics, NCHS.

CONTENTS

Section 1. Definitions

As used in this Act:

(a) "Vital statistics" means the data derived from certificates and reports of birth, death, fetal death, induced termination of pregnancy, marriage and (divorce, dissolution of marriage, or annulment) and related reports.

(b) "System of vital statistics" includes the registration, collection, preservation, amendment and certification of vital records; the collection of other reports required by this Act; and activities related thereto including the tabulation, analysis and publication of vital statistics.

(c) "Vital records" means certificates or reports of birth, death, marriage, (divorce, dissolution of marriage, or annulment) and data related thereto.

(d) "File" means to present a vital record provided for in this Act for registration by the (Office of Vital Statistics).

(e) "Registration" means the acceptance by the (Office of Vital Statistics) and the incorporation of vital records provided for in this Act into its official records.

(f) "Live Birth" means the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after such expulsion or extraction, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord or definite movement of

voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

(g) "Fetal Death" means death prior to the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such expulsion or extraction the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles.

(h) "Induced termination of pregnancy" means the intentional termination of pregnancy with the intention other than to produce a live-born infant or to remove a dead fetus.

(i) "Dead body" means a human body or such parts of such human body from the condition of which it reasonably may be concluded that death recently occurred.

(j) "Final disposition" means the burial, interment, cremation, removal from the State or other authorized disposition of a dead body or fetus.

(k) "Physician" means a person authorized or licensed to practice medicine or osteopathy pursuant to the laws of this State.

(l) "Institution" means any establishment, public or private, which provides in-patient medical, surgical or diagnostic care or treatment or nursing, custodial or domiciliary care, or to which persons are committed by law.

Section 2. Office of Vital Statistics and Statewide System

There is hereby established in the (State public health administrative agency) an (Office of Vital Statistics) which shall install, maintain and operate the only system of vital statistics throughout this State. The (Office of Vital Statistics) shall be provided with sufficient staff, suitable offices, and other resources for the proper administration of the statewide system of vital statistics and for the preservation of its official records.

Section 3. Rules and Regulations

The (State agency empowered to adopt public health regulations), hereinafter referred to as "State agency," is authorized, after notice and public hearing, to adopt, amend and repeal rules and regulations for the purpose of carrying out the provisions of this Act.

Section 4. Appointment of State Registrar of Vital Statistics

The (State Health Officer) shall appoint the State Registrar of Vital Statistics, hereinafter referred to as "State Registrar," in accordance with civil service laws and regulations.

Section 5. Duties of State Registrar

(a) The State registrar shall:

(1) Administer and enforce the provisions of this Act and the rules and regulations issued hereunder, and issue instructions for the efficient administration of the statewide system of vital statistics.

(2) Direct and supervise the statewide system of vital statistics and the (Office of Vital Statistics) and be custodian of its records.

(3) Direct, supervise and control the activities of all persons engaged in the operation of the statewide system of vital statistics as their activities relate to the statewide system

(4) Conduct training programs to promote uniformity of policy and procedures throughout the State in matters pertaining to the system of vital statistics.

(5) Prescribe, with the approval of the (State agency), furnish and distribute such forms as are required by this Act and the rules and regulations issued hereunder or prescribe such other means for transmission of data as will accomplish the purpose of complete and accurate registration.

(6) Prepare and publish reports of vital statistics of this State and such other reports as may be required by the (State agency).

(b) The State registrar may establish or designate additional offices in the State to aid in the administration of the statewide system of vital statistics.

(c) The State registrar may delegate such functions and duties vested in him to employees of the (Office of Vital Statistics) and to employees of an office established or designated under Section 5(b).

(d) The State registrar shall provide copies of certificates or reports required under this Act or data derived from such certificates or reports as he shall determine are necessary to local health agencies for local health planning and program activities. The State registrar shall establish a schedule for such transmittal with each local health agency. The records or data shall remain the property of the (Office of Vital Statistics) and the uses which may be made of such records or data shall be governed by the State registrar. A schedule for the disposition of the certificates, reports or data provided under this section shall be established by the State registrar.

Section 6. Content of Certificates and Reports

(a) In order to promote and maintain nationwide uniformity in the system of vital statistics, the forms of certificates, reports, and other returns required by this Act, or by regulations adopted hereunder, shall include as a minimum the items recommended by the Federal agency responsible for national vital statistics.

(b) Each certificate, report and form required to be filed and registered under this Act shall be on a form or in a format prescribed by the State registrar and shall contain the date received for registration.

(c) Information required by certificates or reports authorized by this Act may be filed and registered by photographic, electronic or other means as prescribed by the State registrar.

Section 7. Birth Registration

(a) A certificate of birth for each live birth which occurs in this State shall be filed with the (Office of Vital Statistics) or as otherwise directed by the State registrar within five days after such birth and shall be registered if it has been completed and filed in accordance with this section.

(b) When a birth occurs in an institution or enroute thereto, the person in charge of the institution or his designated representative shall obtain the personal data, prepare the certificate, secure the signatures required by the certificate and file it with the (Office of Vital Statistics) or as otherwise directed by the State registrar within the required five days. The physician in attendance shall provide the medical information required by the certificate and certify to the facts of birth within 72 hours after the birth. If the physician does not certify to the facts of birth within the required 72 hours, the person in charge of the institution shall complete and sign the certification.

(c) When a birth occurs outside an institution, the certificate shall be prepared and filed by one of the following in the indicated order of priority:

(1) The physician in attendance at or immediately after the birth, or in the absence of such a person,

(2) Any other person in attendance at or immediately after the birth, or in the absence of such a person,

(3) The father, the mother, or, in the absence of the father and the inability of the mother, the person in charge of the premises where the birth occurred.

(d) When a birth occurs on a moving conveyance within the United States and the child is first removed from the conveyance in this State, the birth shall be registered in this State and the place where it is first removed shall be considered the place of birth. When a birth occurs on a moving conveyance while in international waters or air space or in a foreign country and the child is first removed from the conveyance in this State, the birth shall be registered in this State but the certificate shall show the actual place of birth insofar as can be determined.

(e) (1) If the mother was married at the time of either conception or birth, or anytime between conception and birth, the name of the husband shall be entered on the certificate as the father of the child and the surname of the child shall be entered on the certificate as that of the husband, unless paternity has been determined otherwise by a court of competent jurisdiction.

(2) If the mother was not married at the time of either conception or birth or between conception and birth, the name of the father shall not be entered on the certificate of birth without the written consent of the mother and the person to be named as the father, in which case, upon the request of both parents in writing, the surname of the child shall be that of the father.

(3) In any case in which paternity of a child is determined by a court of competent jurisdiction, the name of the father and surname of the child shall be entered on the certificate of birth in accordance with the finding and order of the court.

(4) In all other cases, the surname of the child shall be the legal surname of the mother.

(5) If the father is not named on the certificate of birth, no other information about the father shall be entered on the certificate.

(f) A child born to a married woman as a result of artificial insemination, with consent of her husband, shall be deemed to be the legitimate child of the husband and wife.

(g) Either of the parents of the child or other informant shall attest to the accuracy of the personal data provided in time to permit the filing of the certificate within the five days prescribed above.

Section 8. Infants of Unknown Parentage; Foundling Registration

(a) Whoever assumes the custody of a live born infant of unknown parentage shall report on a form and in a manner prescribed by the State registrar within five days to the (Office of Vital Statistics) the following information:

(1) The date and place of finding;

(2) Sex, color or race, and approximate birth date of child;

(3) Name and address of the person or institution with whom the child has been placed for care;

(4) Name given to the child by the custodian of the child;

(5) Other data required by the State registrar.

(b) The place where the child was found shall be entered as the place of birth.

(c) A report registered under this section shall constitute the certificate of birth for the child.

(d) If the child is identified and a certificate of birth is found or obtained, the report registered under this section shall not be subject to inspection except upon order of a (court of competent jurisdiction) or as provided by regulation.

Section 9. Delayed Registration of Birth

(a) When the birth of a person born in this State has not been filed within the time period provided in Section 7, a certificate of birth may be filed in accordance with regulations of the (State agency). The certificate shall be registered subject to such evidentiary requirements as the (State agency) shall by regulation prescribe to substantiate the alleged facts of birth.

(b) Certificates of birth registered one year or more after the date of birth shall be marked "Delayed" and show on their face the date of the delayed registration.

(c) A summary statement of the evidence submitted in support of the delayed registration shall be endorsed on the certificate.

(d) (1) When an applicant does not submit the minimum documentation required in the regulations for delayed registration or when the State registrar has reasonable cause to question the validity or adequacy of the applicant's sworn statement or the documentary evidence, and if the deficiencies are not corrected, the State registrar shall not register the delayed certificate of birth and shall advise the applicant of the reasons for this action. The State registrar shall advise the applicant of his right of appeal to (a court of competent jurisdiction).

(2) The (State agency) may by regulation provide for the dismissal of an application which is not actively prosecuted.

Section 10. Judicial Procedure to Establish Facts of Birth

(a) If a delayed certificate of birth is rejected under the provisions of Section 9, a petition signed and sworn to by the petitioner may be filed with (a court of competent jurisdiction) for an order establishing a record of the date and place of the birth and the parentage of the person whose birth is to be registered.

(b) Such petition shall be made on a form prescribed and furnished by the State registrar and shall allege:

(1) That the person for whom a delayed certificate of birth is sought was born in this State;

(2) That no certificate of birth of such person can be found in the (Office of Vital Statistics) or (the office of any local custodian of birth certificates);

(3) That diligent efforts by the petitioner have failed to obtain the evidence required in accordance with Section 9 of this Act and regulations adopted pursuant thereto;

(4) That the State registrar has refused to register a delayed certificate of birth; and

(5) Such other allegations as may be required.

(c) The petition shall be accompanied by a statement of the State registrar made in accordance with Section 9 and all documentary evidence which was submitted to the State registrar in support of such registration.

(d) The court shall fix a time and place for hearing the petition and shall give the State registrar ( ) days notice of said hearing. The State registrar or his authorized representative may appear and testify in the proceeding.

(e) If the court finds, from the evidence presented, that the person for whom a delayed certificate of birth is sought was born in this State, it shall make findings as to the place and date of birth, parentage, and such other findings as the case may require and shall issue an order on a form prescribed and furnished by the State registrar to establish a certificate of birth. This order shall include the birth data to be registered, a description of the evidence presented, and the date of the court's action.

(f) The clerk of court shall forward each such order to the State registrar not later than the tenth day of the calendar month following the month in which it was entered. Such order shall be registered by the State registrar and shall constitute the certificate of birth.

Section 11. Court Reports of Adoption

(a) For each adoption decreed by (a court of competent jurisdiction) in this State, the court shall require the preparation of a report of adoption on a form prescribed and furnished by the State registrar. The report shall include such facts as are necessary to locate and identify the certificate of birth of the person adopted; provide information necessary to establish a new certificate of birth of the person adopted; and identify the order of adoption and be certified by the clerk of court.

(b) Information in the possession of the petitioner necessary to prepare the report of adoption shall be furnished by each petitioner for adoption or his attorney. The (social, welfare agency) or a person having knowledge of the facts shall supply the court with such information as may be necessary to complete the report. The provision of such information shall be a prerequisite to the issuance of a final decree in the matter by the court.

(c) Whenever an adoption decree is amended or annulled, the clerk of the court shall prepare a report thereof, which shall include such facts as are necessare to identify the original report of adoption and the facts amended in the adoption decree.

(d) Not later than the ( ) day of each calendar month or more frequently as directed by the State registrar, the clerk of such court shall forward to the State registrar reports of decrees of adoption, annulment, or amendments thereof entered in the preceding month, together with such related reports as the State registrar shall require.

(e) When the State registrar shall receive a report of adoption or annulment of adoption or amendment of a decree of adoption from a court for a person born outside this State, such report shall be forwarded to the State registrar in the State of birth. If the birth occurred in a foreign country, the report of adoption shall be returned to the attorney or agency handling the adoption for submission to the appropriate federal agency.

Section 12. New Certificates of Birth Following Adoption, Legitimation, and Paternity Determination

(a) The State registrar shall establish a new certificate of birth for a person born in this State when he receives the following:

(1) A report of adoption as provided in Section 11 or a report of adoption prepared and filed in accordance with the laws of another State or foreign country, or a certified copy of the decree of adoption, together with the information necessary to identify the original certificate of birth and to establish a new certificate of birth; except that a new certificate of birth shall not be established if so requested by the court decreeing the adoption, the adoptive parents, or the adopted person.

(2) A request that a new certificate be established and such evidence as required by regulation proving that such person has been legitimated, or that a (court of competent jurisdiction) has determined the paternity of such a person.

(b) When a new certificate of birth is established, the actual place and date of birth shall be shown. It shall be substituted for the original certificate of birth.

(1) Thereafter, the original certificate and the evidence of adoption, paternity determination or legitimation shall not be subject to inspection except upon order of (a court of competent jurisdiction) or as provided by regulation.

(2) Upon receipt of a report of an amended decree of adoption, the certificate of birth shall be amended as provided by regulation.

(3) Upon receipt of a decree of annulment of adoption, the original certificate of birth shall be restored to its place in the files and the new certificate and evidence shall not be subject to inspection except upon order of (a court of competent jurisdiction) or as provided by regulation.

(c) If no certificate of birth is on file for the person for whom a new birth certificate is to be established under this section, a delayed certificate of birth shall be filed with the State registrar as provided in Section 9 or Section 10 of this Act before a new certificate of birth is established. The new birth certificate shall be prepared on the delayed birth certificate form in use at the time of adoption, legitimation or paternity determination. When the date and place of birth and parentage have been established in the adoption proceedings, a delayed certificate in the name and parentage at birth shall not be required.

(d) When a new certificate of birth is established by the State registrar, all copies of the original certificate of birth in the custody of any custodian of permanent local records in this State shall be sealed from inspection or forwarded to the State registrar, as he shall direct.

Section 13. Death Registration

(a) A death certificate for each death which occurs in this State shall be filed with the (Office of Vital Statistics) or as otherwise directed by the State registrar within five days after death and prior to final disposition, or as prescribed by regulations of the (State agency). It shall be registered if it has been completed and filed in accordance with this section.

(1) If the place of death is unknown but the body is found in this State, the death certificate shall be completed and filed in accordance with this section. The place where the body is found shall be shown as the place of death. If the date of death is unknown, it shall be determined by approximation.

(2) When death occurs in a moving conveyance in the United States and the body is first removed from the conveyance in this State, the death shall be registered in this State and the place where it is first removed shall be considered the place of death. When a death occurs on a moving conveyance while in international waters or air space or in a foreign country and the body is first removed from the conveyance in this State, the death shall be registered in this State but the certificate shall show the actual place of death insofar as can be determined.

(b) The funeral director or person acting as such who first assumes custody of the dead body shall file the death certificate. He shall obtain the personal data from the next of kin or the best qualified person or source available and shall obtain the medical certification from the person responsible therefore, as set forth below.

(c) The medical certification shall be completed, signed, and returned to the funeral director within 48 hours after death by the physician in charge of the patient's care for the illness or condition which resulted in death, except when inquiry is required by the (Post-Mortem Examinations Act). In the absence of said physician or with his approval the certificate may be completed and signed by his associate physician, the chief medical officer of the institution in which death occurred or by the pathologist who performed an autopsy upon the decedent.

(d) When death occurs more than ten days after the decedent was last treated by a physician, or if the cause of death appears to be other than the illness or condition for which the deceased was being treated or if inquiry is required by the (Post-Mortem Examinations Act), the case shall be referred to the (medical) examiner, coroner) for investigation to determine and certify the cause of death. If the (medical examiner, coroner) determines that the case does not fall within his jurisdiction, he shall within 24 hours refer the case back to the physician for completion of the medical certification.

(e) When inquiry is required by the (Post-Mortem Examinations Act), the (medical examiner, coroner) shall determine the cause of death and shall complete and sign the medical certification within 48 hours after taking charge of the case.

(f) If the cause of death cannot be determined within 48 hours after death, the medical certification shall be completed as provided by regulation. The attending physician or (medical examiner, coroner) shall give the funeral director or person acting as such notice of the reason for the delay, and final disposition of the body shall not be made until authorized by the attending physician or (medical examiner, coroner).

(g) When a death is presumed to have occurred within this State but the body cannot be located, a death certificate may be prepared by the State registrar upon receipt of an order of (a court of competent jurisdiction), which shall include the finding of facts required to

complete the death certificate. Such a death certificate shall be marked "Presumptive" and shall show on its face the date of registration and shall identify the court and the date of the decree.

(h) The (State agency) may by regulation provide for the extension of time periods prescribed for the filing of death certificates in cases where compliance therewith would result in undue hardship.

Section 14. Delayed Registration of Death

(a) When a death occurring in this State has not been registered within the time period prescribed by Section 13, a certificate shall be registered subject to such evidentiary requirements as the (State agency) shall by regulation prescribe to substantiate the alleged facts of death.

(b) Certificates of death registered one year or more after the date of death shall be marked "Delayed" and shall show on their face the date of the delayed registration.

Section 15. Reports of Fetal Death

(a) Each fetal death of 20 completed weeks gestation or more, or a weight of 350 grams or more, which occurs in this State shall be reported within five days after delivery to the (Office of Vital Statistics) or as otherwise directed by the State registrar.

(1) When a dead fetus is delivered in an institution, the person in charge of the institution or his designated representative shall prepare and file the report.

(2) When a dead fetus is delivered outside an institution, the physician in attendance at or immediately after delivery shall prepare and file the report.

(b) The name of the father shall be entered on the fetal death report in accordance with the provisions of Section 7.

(c) When a fetal death required to be reported by this section occurs without medical attendance at or immediately after the delivery or when inquiry is required by the (Post-Mortem Examinations Act), the (medical examiner, coroner) shall investigate the cause and shall prepare and file the report.

(d) The reports required under this section are statistical reports to be used only for medical and health purposes and shall not be incorporated into the permanent official records of the system of vital statistics. A schedule for the disposition of these reports shall be provided for by regulation.

Section 16. Reports of Induced Termination of Pregnancy

(a) Each induced termination of pregnancy which occurs in this State shall be reported to the (Office of Vital Statistics) within five days by the person in charge of the institution in which the induced termination of pregnancy was performed. If the induced termination of pregnancy was performed outside an institution, the attending physician shall prepare and file the report.

(b) The reports required under this section are statistical reports to be used only for medical and health purposes and shall not be incorporated into the permanent official records of the system of vital statistics. A schedule for the disposition of these reports shall be provided for by regulation.

Section 17. Authorization for Final Disposition

(a) The funeral director or person acting as such who first assumes custody of a dead body shall, within 72 hours and prior to final disposition of the body, obtain authorization for final disposition of the body. The physician or (medical examiner, coroner) when certifying the cause of death shall also authorize final disposition of the body on a form prescribed and furnished by the State registrar. If the body is to be cremated, authorization for cremation must be obtained from the (medical examiner, coroner) on a form prescribed and furnished by the State registrar.

(b) Prior to final disposition of a dead fetus, irrespective of the duration of pregnancy, the funeral director, the person in charge of the institution or other person assuming responsibility for final disposition of the fetus shall obtain from the parents authorization for final disposition on a form prescribed and furnished or approved by the State registrar. After final disposition the authorization shall be retained for a period of_____ years by the funeral director, the person in charge of the institution or other person making the final disposition.

(c) With the consent of the physician or (medical examiner, coroner) who is to certify the cause of death, a body may be moved from the place of death for the purpose of being prepared for final disposition.

(d) An authorization for disposition issued under the law of another State which accompanies a dead body or fetus brought into this State shall be authority for final disposition of the body or fetus in this State.

(e) Authorization for disinterment and reinterment shall be required prior to disinterment of a dead body or fetus. Such authorization shall be issued by the State registrar to a licensed funeral director or person acting as such, upon proper application.

(f) No sexton or other person in charge of any premises in which interments or other disposition of dead bodies is made shall inter or allow interment or other disposition of a dead body or fetus unless it is accompanied by authorization for final disposition. Each person in charge of any place for final disposition shall keep a record of all final dispositions made in the premises under his charge, stating the name of the deceased person, date and place of death, date of final disposition, and the name and address of the funeral director or person acting as such.

(g) Each person in charge of any place for final disposition shall endorse upon the authorization the date of disposition over his

signature and shall return all authorizations to the (Office of Vital Statistics) in the State where death occurred within 10 days after the date of disposition. When there is no person in charge of the place for final disposition, the funeral director or person acting as such shall endorse and return the authorization.

Section 18. Marriage Registration

(a) A record of each marriage performed in this State shall be filed with the (Office of Vital Statistics) and shall be registered if it has been completed and filed in accordance with this section.

(b) The official who issues the marriage license shall prepare the record on the form prescribed and furnished by the State registrar upon the basis of information obtained from (one of) the parties to be married.

(c) Every person who performs a marriage shall certify the fact of marriage and return the record to the official who issued the license within ( ) days after the ceremony. (This record shall be signed by the witnesses to the ceremony.) (A signed copy shall be given to the parties.)

(d) Every official issuing marriage licenses shall complete and forward to the (Office of Vital Statistics) on or before the ( ) day of each calendar month the records of marriages filed with him during the preceding calendar month.

(e) A marriage record not filed within the time prescribed by statute may be registered in accordance with regulations of the (State agency).

(f) Provision for a recording for may be added here if desired.

Section 19. (Divorce, Dissolution of Marriage, or Annulment) Registration

(a) For each (divorce, dissolution of marriage, or annulment) granted by any court in this State, a record shall be filed by the (clerk of court) with the (Office of Vital Statistics) and shall be registered if it has been completed and filed in accordance with this section. The record shall be prepared on a form prescribed and furnished by the State registrar by the petitioner or his legal representative and shall be presented to the (clerk of court) with the petition. In all cases the completed record shall be a prerequisite to the granting of the final decree.

(b) The (clerk of court) shall complete and forward to the (Office of Vital Statistics) on or before the ( ) day of each calendar month the records of each (divorce, dissolution of marriage or annulment) filed with him during the preceding calendar month.

(c) Provision for a recording fee may be added here if desired.

Section 20. Amendment of Vital Records

(a) A certificate or record registered under this Act may be amended only in accordance with this Act and regulations adopted by the (State agency) to protect the integrity and accuracy of vital records.

(b) A certificate or record that is amended under this section shall be marked "Amended" (Except as provided in paragraph (c) of this section). The date of amendment and a summary description of the evidence submitted in support of the amendment shall be endorsed on or made a part of the record. The (State agency) shall prescribe by regulation the conditions under which additions or minor corrections may be made to certificates or records within one year after the date of the event without the certificate or record being considered as amended.

(c) Upon written request of both parents and receipt of a sworn acknowledgment of paternity of a child born out of wedlock signed by both parents, the State registrar shall amend a certificate of birth to show such paternity if paternity is not shown on the birth certificate. Upon written request of both parents, the surname of the child shall be changed on the certificate to that of the father. Such certificate shall not be marked "Amended."

(d) Upon receipt of a certified copy of a court order changing the name of a person born in this State and upon request of such person or his parents, guardian or legal representative, the State registrar shall amend the certificate of birth to show the new name.

(e) Upon receipt of a sworn statement from the physician performing the surgery certifying the sex of an individual born in this State has been changed by surgical procedure, and upon written request of such individual, the birth certificate shall be amended to reflect such change. The name of the individual may also be changed in accordance with the provisions of Section 20(d) of this Act.

(f) When an applicant does not submit the minimum documentation required in the regulations for amending a vital record or when the State registrar has reasonable cause to question the validity or adequacy of the applicant's sworn statements or the documentary evidence, and if the deficiencies are not corrected, the State registrar shall not amend the vital record and shall advise the applicant of the reason for this section. The State registrar shall advise the applicant of his right of appeal to a (court of competent jurisdiction).

(g) When a certificate is amended under this section, the State Registrar shall report the amendment to the (custodian of any permanent local records) and such record shall be amended accordingly.

Section 21. Reproduction of Vital Records

To preserve vital records, the State registrar is authorized to prepare typewritten, photographic, electronic or other reproductions of original records and files in the (Office of Vital Statistics). Such reproductions when certified by the State registrar shall be accepted as the original records. The documents from which permanent reproductions have been made and verified may be disposed of as provided by regulations.

Section 22. Disclosure of Information from Vital Records

(a) To protect the integrity of vital records, to insure their proper use, and to insure the efficient and proper administration of the system of vital statistics, it shall be unlawful for any person to permit inspection of, or to disclose information contained in vital records or to copy or issue a copy of all or part of any such record except as authorized by this Act and by regulation or by order of a (court of competent jurisdiction). Such regulations shall provide for adequate standards of security and confidentiality of vital records.

(b) The (State agency) may authorize by regulation the disclosure of information contained in vital records for research purposes.

(c) Appeals from decisions of the custodians of permanent local records refusing to disclose information, or to permit inspection of or copying of records under the authority of this section and regulation issued hereunder shall be made to the State registrar, whose decisions shall be binding upon the (local custodians of permanent local records).

(d) When 100 years have elapsed after the date of birth, or 50 years have elapsed after the date of death, marriage, or (divorce, dissolution of marriage or annulment), the records of these events in the custody of the State registrar shall become public records and shall be made available to any interested person in accordance with regulations which shall provide for the continued safe keeping of the records.

Section 23. Copies or Data from the System of Vital Statistics

In accordance with Section 22 of this Act and the regulations adopted pursuant thereto:

(a) The State registrar and other custodian(s) authorized by the State registrar to issue certified copies shall upon receipt of written application issue a certified copy of a vital record in his custody or a part thereof to any applicant having a direct and tangible interest in the vital record. Each copy issued shall show the date of registration and copies issued from records marked "Delayed" or "Amended" shall be similarly marked and show the effective date. All forms and procedures used in the issuance of certified copies of vital records in this State shall be approved or provided by the State registrar.

(b) A certified copy of a vital record or any part thereof, issued in accordance with subsection (a), shall be considered for all purposes the same as the original and shall be prima facie evidence of the facts stated therein.

(c) The Federal agency responsible for national vital statistics may be furnished such copies or data from the system of vital statistics as it may require for national statistics, provided such Federal agency share in the cost of collecting, processing and transmitting such data, and provided further that such data shall not be used for other than statistical purposes by the Federal agency unless so authorized by the State registrar.

(d) Federal, State, local and other public or private agencies may, upon request, be furnished copies or data for statistical or administrative purposes upon such terms or conditions as may be prescribed by regulation, and provided that such copies or data shall not be used for other than the purpose for which it was requested unless so authorized by the State registrar.

(e) The State registrar may, by agreement, transmit transcripts of records and other reports required by this Act to offices of vital statistics outside this State when such records or other reports relate to residents of those jurisdictions or persons born in those jurisdictions. The agreement shall require that the transcripts be used for statistical and administrative purposes only as specified in the agreement. Such transcripts shall not be retained by the other jurisdiction for more than two years from the date of the event or after the statistical tabulation have been accomplished, whichever time period is shorter.

Transcripts received from other jurisdictions by the (Office of Vital Statistics) in this State shall be handled in the same manner as prescribed in the preceding paragraph.

(f) No person shall prepare or issue any certificate which purports to be an original, certified copy or copy of a vital record as authorized in this Act or regulations adopted hereunder.

Section 24. Fees for Copies and Searches

(a) The (State agency) shall prescribe the fees to be paid for certified copies or certificates or records, or for a search of the files or records when no copy is made, or for copies or information provided for research, statistical or administrative purposes.

(b) Fees collected under this section by the State registrar shall be deposited in the (general fund, special vital statistics fund) of this State, according to the procedures established by (the laws governing collection, the State Treasurer).

Section 25. Persons Required to Keep Records

(a) Every person in charge of an institution as defined in this Act shall keep a record of personal particulars and data concerning each person admitted or confined to such institution. This record shall include such information as required by the certificates of birth and death and the reports of fetal death and induced termination of pregnancy forms required by this Act. The record shall be made at the time of admission from information provided by the person being admitted or confined, but when it cannot be so obtained, the same shall be obtained from relatives or other persons acquainted with the facts. The name and address of the person providing the information shall be a part of the record.

(b) When a dead body is released or disposed of by an institution, the person in charge of the institution shall keep a record showing the name of the deceased, date of death, name and address of the person to whom the body is released, date of removal from the institution, or if finally disposed of by the institution, the date, place, and manner of disposition shall be recorded.

(c) A funeral director, embalmer, or other person who removes from the place of death or transports or finally disposes of a dead body or fetus, in addition to filing any certificate or other report required by this Act or regulations promulgated hereunder, shall keep a record which shall identify the body, and such information pertaining to his receipt, removal, and delivery of such body as may be provided in regulations adopted by the (State agency).

(d) Records maintained under this section (shall be retained for a period of not less than ( ) years and shall be made available for inspection by the State registrar or his representative upon demand.

Section 26. Duties to Furnish Information Relative to Vital Events

Any person having knowledge of the facts shall furnish such information as he may possess regarding any birth, death, fetal death, marriage, or (divorce, dissolution of marriage or annulment), upon demand of the State registrar.

Section 27. Penalties

(a)(1) Any person who willfully and knowingly makes any false statement in a certificate, record, or report required to be filed under this Act, or in an application for an amendment thereof or in an application for a certified copy of a vital record, or who willfully and knowingly supplies false information intending that such information be used in the preparation of any such report, record, or certificate, or amendment thereof; or

(2) Any person who without lawful authority and with the intent to deceive, makes, counterfeits, alters, amends, or mutilates any certificate, record, or report required to be filed under this Act or a certified copy of such certificate, record or report; or

(3) Any person who willfully and knowingly obtains, possesses, uses, sells, furnishes, or attempts to obtain, possess, use, sell, or furnish to another, for any purpose of deception, any certificate, record, report, or certified copy thereof so made, counterfeited, altered, amended, or mutilated; or

(4) Any person who with the intention to deceive willfully and knowingly obtains, possesses, uses, sells, furnishes, or attempts to obtain, possess, use, sell, or furnish to another any certificate of birth or certified copy of a certificate of birth knowing that such certificate or certified copy was issued upon a certificate which is false in whole or in part or which relates to the birth of another person, whether living or deceased; or

(5) Any person who willfully and knowingly furnishes or processes a certificate of birth or certified copy of a certificate of birth with the knowledge or intention that it be used for the purposes of deception by a person other than the person to whom the certificate of birth relates; or

(6) Any person who without lawful authority possesses any certificate, record, or report, required by this Act or a copy or certified copy of such certificate, record or report knowing same to have been stolen or otherwise unlawfully obtained; shall be punished by a fine of not more than $10,000 or imprisoned not more than five years, or both.

(b)(1) Any person who willfully and knowingly refuses to provide information required by this Act or regulations adopted hereunder; or

(2) Any person who willfully and knowingly transports or accepts for transportation, interment, or other disposition of a dead body without an accompanying permit as provided in this Act; or

(3) Any person who willfully and knowingly neglects or violates any of the provisions of this Act or refuses to perform any of the duties imposed upon him by this Act shall be punished, unless otherwise stated, by a fine of not more than $1,000 or be imprisoned for not more than one year, or both.

Section 28. Applicability

The provisions of this Act also apply to all certificates of birth, death, marriage, and (divorce, dissolution of marriage or annulment) and reports of fetal death and induced termination of pregnancy previously received by the (Office of Vital Statistics) or by any (custodian of permanent local records).

Section 29. Severability

If any provision of this Act (or the application thereof to any person or circumstances) is held invalid, such invalidity shall not affect other provisions or applications of the Act which can be given effect without the invalid provision or application, and to this end the provisions of this Act are declared to be severable.

Section 30. Uniformity of Interpretation

This Act shall be so construed as to effectuate its general purpose to make uniform the laws of those States which enact it.

Section 31. Short Title

This Act may be cited as the "Vital Statistics Act."

Section 32. Repeal

(Section __ and Section __,__ Laws of __ are hereby repealed; and) all other laws or parts of laws which are inconsistent with the provisions of this Act are hereby repealed.

Section 33. Time of Taking Effect

This Act shall take effect _____ .

ATTACHMENT II

PROPOSED AMENDMENTS AND ANALYSIS
(Suggested by the Department of Justice)

Proposed Amendments to the Model State Vital Statistics Act

*Section 12: Birth Registration

(a) A certification of birth for each live birth which occurs in this State shall be filed with the (local registrar) of the district in which the birth occurs and with the (State registrar) within seven days after such birth and shall be registered by such registrars if it has been completed and filed in accordance with this section: Provided, that when a birth occurs on a moving conveyance a birth certificate shall be filed in the district in which the child was first removed from the conveyance.

**Section 18: add new subsection (e):

Alternative 1

(e) Where it is known that the deceased was born in this State, the (local registrar) of the district in which the death occurred shall cause notice of such death to be filed at the office of the (local registrar) having custody of the deceased's certificate of birth. It shall be the duty of such (local registrar having custody to conspciuously indicate on the face of such certificate the fact of death of the person whose birth is recorded therein.

Alternative 2

(e) Where it is known that the deceased was born in another State, the (local registrar) of the district in which death occurred shall cause notice of such death to be filed in such other State at the office of the (local registrar) having custody of the deceased's certificate of birth. It shall be the duty of such (local registrar) in the State of birth to conspicuously indicate on the face of such certificate the fact of death of the person whose birth is recorded therein.

*Section 26(a): Add after the words "except as authorized by regulation..." in paragraph (a);

*These sections have been included in the Model Act (Attachment I)
**These sections have not been included in the Model Act (Attachment I)

Such regulation shall provide for minimum standards of security and confidentiality for the retention and disclosure of vital statistics records.

**Section 27(a): Add after the first sentence in paragraph (a):

Any request in the form of an application, and/or such certified copy that is issued upon request in any form shall contain explicit warnings, conspicuously displayed, that willfull and knowing falsification of information on an application, and/or willfull and knowing possession or use of a copy with knowledge that it contains such false information, shall be cause for criminal liability under Sections 31(a)(1)(3)(4) of this Act.

*Section 31: Penalties

(a)(1) Any person who willfully and knowingly makes any false statement in a report, record, or certificate required to be filed under this Act, or in an application for an amendment or copy thereof, or who willfully and knowingly supplies false information intending that such information be used in the preparation of any such report, record, or certificate, or amendment thereof; or

(2) Any person who without lawful authority and with the intent to deceive, makes, counterfeits, alters, amends, or mutilates any report, record, or certificate required to be filed under this Act or a certified copy of such report, record, or certificate; or

(3) Any person who willfully and knowingly obtains, possesses, uses, furnishes, or attempts to obtain, possess, use, or furnish to another for use, for any purpose of deception, any certificate, record, report, or certified copy thereof so made, counterfeited, altered, amended, or mutilated; or

(4) Any person who with the intention to deceive willfully and knowingly obtains, possesses, uses, furnishes, or attempts to obtain, possess, use, or furnish to another any certificate of birth or certified copy of a record of birth knowing that such certificate or certified copy was issued upon a record which is false in whole or in part or which relates to the birth of another person, whether living or deceased; or

*These sections have been included in the Model Act (Attachment I)
**These sections have not been included in the Model Act (Attachment I)

(5) Any person, to include an employee of this State or political subdivision thereof, who willfully and knowingly furnishes or processes a certificate of birth or certified copy of a record of birth with the knowledge or intention that it be used by a person other than the person to whom the record of birth relates [shall be punished by a fine of not more than $1,000 or imprisoned not more than one year, or both.]; or

(6) Any person who possesses any certificate, record, or report required to be filed under this Act or a certified copy of such certificate, record, or report, knowing same to have been stolen or otherwise unlawfully issued; shall be punished by a fine of not more than $10,000 or imprisoned not more than five years, or both.

(b) Any person who willfully and knowingly refuses to provide information required to be filed under Sections 12, 13, 16, 17, 18, 19, 20, 22, or 23 of this Act or in completion of any application required to be filed thereunder, shall be punished by a fine not to exceed $1,000 or imprisoned not more than one year, or both.

(c)(1) Any person who willfully and knowingly transports or accepts for transportation, interment, or other disposition a dead body without an accompanying permit as provided in this Act; or

[(2) Any person who refuses to provide information required by this Act; or]

(2) Any person who willfully and knowingly neglects or violates any of the provisions of this Act or refuses to perform any of the duties imposed upon him by this Act shall be punished, unless otherwise states, by a fine of not more than $1,000 or be imprisoned for not more than six months, or both.

Section By Section Analysis of Proposed Amendments To The Model State Vital Statistics Act

The proposed amendments generally broaden the Act's present coverage to proscribe virtually every stage in the obtaining and use of false identification. The Department of Justice considers it imperative that the criminal technique of false identification be deterred at the state and local level. Of particular interest to the Department are the Model Act's penal provisions in Section

Brackets[] denote deletions.
Underlined words denote additions.

31. It is recommended that the illegal obtaining and use of identification records be upgraded from a misdemeanor to a felony under state law.

Section 12 would require the filing of a birth certificate both at the local and state level because the local registrar having custody of the certificate of birth (in the State of death under alternative 1 of Section 18, or in the state of birth under alternative 2, herein below) cannot always be determined unless birth records are centrally filed at the State level.

Section 18 goes hand in hand with Section 12. Centralized state filing of birth certificates in each state would enable officials in the state of death to pinpoint the precise location of birth, either within the state (alternative 1) or without the state (alternative 2), anywhere in the country. The objective is to match up death records with birth records by a notation on the birth certificate. Alternative 1 concerns only intra-state transmission of information: thus, each state would have the power to enact the proposed provision. But, alternative 2 necessarily involves interstate efforts at matching statistical records. Currently, the local registrar in the state of birth can match records, but it is considered likely that all states will have the same interest in protecting their birth and death records from would-be imposters. The state of death would notify the state of birth, in which event alternative 2 will require official notation on the birth certificate.

Section 26(a) and implementing regulations would allow inspection of vital statistics records only for proper purposes and under minimum standards of security. Each state should be allowed maximum flexibility in regulating public inspection of vital statistics records.

Section 27(a) would require a warning to deter fraudulent obtaining and use of false identification, primarily birth certificates. For those states that presently require an application to obtain a certified copy of a birth certificate, the suggested warning will help to deter fraud at the earliest possible stage - the application stage. Where a formal application is not required, a warning displayed on the issued copy will serve to deter further criminal use of the document.

Section 31(a)(1) broadens present coverage to prohibit false statements in an application for a copy of a record.

Section 31(a)(2) adds the offense of counterfeiting records.

Section 31(a)(3) prohibits other uses of bogus documents for deception.

Section 31(a)(4) specifies that willfull and knowing use is required for certain penalty provisions and proscribes the same uses of birth certificates as in the prior subsection relating to records in general. The subsection emphasizes the irrelevancy is proving a violation that the person whose birth certificate is illegally used is deceased.

Section 31(a)(5) deletes the present misdemeanor penalty provision; the penal provision as amended would make it a felony for a registrar or other state employee to fraudulently process a birth certificate.

Section 31(a)(6) adds the offense of possession with knowledge the record was illegally obtained. The second part makes all the above felonies at the state level, even though in the past fraudulent use of state documents was not a state crime. The objective is to cut off possession and use before passport fraud and other federally-relates offenses are committed.

Section 31(b) suggests a lighter penalty for the mere refusal to provide information to certain issuing authorities. However, a refusal to supply facts under Sections 14 (delayed registration of births) and 27 (copies of records) is remedied by denial of the petitioner's request.

Section 31(c)(2) has the effect of making violation of Section 31(c)(1) and other provisions of the Act a misdeamor.

ATTACHMENT III

MODEL STATE VITAL STATISTICS REGULATIONS (Selected Sections)
Department of Health, Education and Welfare

Regulation 13, Disclosure of Records

(Reference: Section 21 of the Model Act)

To protect the integrity of vital records

(a) The (State registrar of vital statistics) or the custodian of permanent local records shall not permit inspection of, or disclose information contained in vital statistics records, or copy or issue a copy of all or part of any such record unless he is satisfied that the applicant has a direct and tangible interest in such record.

(1) The registrant, a member of his immediate family, his guardian, or their respective legal representatives shall be considered to have a direct and tangible interest. Others may demonstrate a direct and tangible interest when information is needed for determination or protection of a personal or property right.

(2) The term "legal representative" shall include an attorney, physician, funeral director, or other authorized agent acting in behalf of the registrant or his family.

(3) The natural parents of adopted children when neither has custody, and commercial firms or agencies requesting listings of names and addresses shall not be considered to have a direct and tangible interest.

(b) The (State registrar of vital statistics) may permit the use of data from vital statistics records for statistical research purposes, subject to such conditions as the (State registrar of vital statistics) may impose. No data shall be furnished from records for research purposes until the (State registrar of vital statistics) has prepared, in writing, the conditions under which the records or data will be used

and received an agreement signed by a responsible agent of the research organization agreeing to meet with and conform to such conditions.

(c) The (State registrar of vital statistics) or the local custodian may disclose data from vital statistics records to Federal, State, county, or municipal agencies of government which request such data in the conduct of their official duties.

(d) Information from vital statistics records indicating a birth occurred out of wedlock may be disclosed only if it can be shown that the information is beneficial to the registrant.

(e) Whenever it shall be deemed necessary to establish an applicant's right to information from vital statistics records, the (State registrar of vital statistics) or local custodian may require written application, identification of the applicant, or a sworn statement.

(f) Nothing in this Regulation shall be construed to permit disclosure of information contained in the "Confidential Information for Medical and Health Use Only" Section unless specifically authorized by the (State registrar of vital statistics) for statistical research or if authorized by (a court of competent jurisdiction).

Regulation 14. Copies of Data from Vital Records

(Reference: Section 22 of the Model Act)

(a) Full or short form certified copies of vital records may be made by mechanical, electronic, or other reproductive processes, except that the information contained in the "Confidential Information for Medical and Health Use Only" Section on birth and fetal death certificates shall not be included.

(b) When a certified copy is issued, each certification shall be signed and certified as a true copy by the officer in whose custody the record is entrusted and shall include the data issued, the name or an authorized facsimile thereof, and the seal of the issuing office shall be affixed thereon.

(c) Confidential verifications of the facts contained in vital statistics records may be furnished by the (State registrar of vital statistics) to any Federal, State, county, or municipal government agency or to any other agency representing the interest of the registrant, subject to the limitations as indicated in (a) above. Such confidential verifications shall be on forms prescribed and furnished by the (State registrar of vital statistics) or on forms furnished by the requesting agency and acceptable to the (State registrar of vital statistics); or, the (State registrar of vital statistics) may authorize the verification in other ways when it shall prove in the best interests of his office.

(d) When the (State registrar of vital statistics) finds evidence that a certificate was registered through misrepresentation or fraud, he shall have authority to withhold the issuance of a certified copy of such certificate until a court determination of the facts has been made.

Regulation 15. Fees for Copies and Searches

(Reference: Section 23 of the Model Act)

No certified copies shall be issued until the fee for such copy is received unless specific approval has been obtained from the (State registrar of vital statistics) or otherwise provided for by statute or regulation.

For the issuance of a full certified copy or short form or birth card certification of a vital record, the fee shall be ___ per copy. For each search of the files when no record is found or no copy is made, the fee shall be ____. For statistical research purposes, the (State registrar of vital statistics) shall determine the fee for such services on the basis of the costs of providing such services and determine the manner in which such costs must be paid.

REPORT B

Matching of Birth and Death Records

Matching of Birth and Death Records

SECTION I

INTRODUCTION

The Federal Advisory Committee on False Identification (FACFI) has endorsed the concept of birth/death matching as a deterrent to criminals seeking to obtain false IDs. The Law Enforcement Assistance Administration (LEAA) has recognized the need to analyze this recommendation in greater detail and has supported this MITRE study, which estimates the cost of birth/death matching and suggests procedures for implementing a partial solution to the false ID problem.

Birth/death matching implies that when a person dies, his birth certificate will be located from the information available on the death certificate and marked "deceased." At present, this is not done because there is no obvious relationship between where the person dies and where he was born; therefore, birth and death files are separately stored and rarely coordinated.

It is well known that false birth certificates are obtained (and subsequently false identities established) by applying for the birth certificate of deceased persons. If the issuer of the birth certificate has no death data and no reason to deny the request, a valid certified birth certificate is issued. The criminal recipient assumes the identity of the deceased person and uses the certificate to obtain a driver's license, passport and other documents, further reinforcing the apparent validity of his false identity.

When a person dies, a death certificate is filled out by the funeral director and attending physician. The death certificate contains a considerable amount of personal information about the deceased person that is supplied by a close relative.* Information such as Social Security number, veteran status, and marital status is necessary for legal and insurance purposes. In addition, the death certificate contains date of birth, place of birth, age, sex, full name, father's name, mother's maiden name, etc. This information is similar to the information required on a birth certificate request form. At present, a copy of the death certificate is forwarded from the state in which the person dies to the registrar of the state of the decedent's usual residence and is filed for census and statistical purposes.

*It is very rare for a deceased person to go unidentified, e.g., a derelict or unidentified suicide; these cases are statistically insignificant, and the false ID criminal would not know that the life/death match had not been made.

It has been determined from other FACFI studies that the false ID criminal is generally between the ages of 18 and 40, which led to the conclusion that an upper limit (greater than 40 years) for birth/death matching would be effective in thwarting false ID criminals and still be consonant with economy.

This report examines the cost of and procedures for effective birth/death matching. A step by step process is described and an appropriate cost analysis made which recognizes the realities of the present flow of data between states and the Federal government and the uses of this data for other than birth/death matching.

SECTION II

SUMMARY AND CONCLUSIONS

Low-cost procedures for matching birth and death certificates can be accomplished most effectively and efficiently if the procedure is limited to persons whose birth certificates would be of interest to false ID criminals (up to age 55). The most cost-effective and reliable method of implementing interstate birth/death matching is by coordinating it through the National Center for Health Statistics, rather than using present state-to-state cooperative procedures for transmitting "resident events." If the related activities of birth/death matching, resident events, a death index, and death statistics are centrally coordinated, the resulting overall cost will be minimized.

The search procedure needed to backdate birth/death matching is inherently labor intensive as 100 million records must be scanned by people without computer assistance. Matching recent deaths on a continuing basis will cost between 50¢ and $1.25 per record and the speed is a function of how the centralized coordination is achieved and whether local office records are updated. A major saving can be achieved if the redundant files kept in about 7000 local offices were not used for issuing certified copies of birth certificates as these records would have to be updated monthly. The local offices could still provide the important roles of (1) helping applicants fill out the standardized application forms; (2) collect fees; and (3) forward birth certificate requests to the state office. The local offices could be compensated for their efforts on a population basis or by keeping a part of each fee collected. In-person applications for birth certificates are additionally a potential deterrent to false ID fraud.

In the long term, birth/death matching will be effective in denying the false ID criminal birth certificates of dead people; however, there is an interim period between the actual death and the monthly certificate update which a clever criminal may be able to exploit.

Birth/death matching will have no impact on the public's easy access to certified copies of birth certificates for lawful purposes but should increase personal privacy by preventing criminals from using names of deceased persons for fraudulent purposes.

There are 320,000 deaths annually of persons under 55 years of age. The annual cost of this birth/death matching averages .4 man-years/state, or $320,000 at an average loaded salary of $16,000. In the last 50 years,

100 million people have died but only 8 million birth/deaths must be matched. The total one-time cost of backdating is approximately 7 man-years/state or $112,000/state. Although there is presently intrastate birth/death matching and interstate transmission of death data, the personalized procedure described in this report will require the explicit approval of every state, all of whom should consider the following conclusions.

- It is practical and not unduly expensive to institute an interstate process of birth/death matching. The death certificate contains six parameters that can be used for unique matching; in addition, there presently is an interstate exchange of death data for statistical purposes.

- The most economical and expedient method of matching can be done by transmitting the death certificates from the states to a central source, where sorting and mailing of data back to the appropriate states can be centrally performed.

- A saving can be realized by combining birth/death matching with the present interstate cooperative procedure of transmitting data on "resident events"; the National Center for Health Statistics (Division of HEW) could sort both sets of data. An additional saving will occur when the "death index" file and vital statistics function are coordinated using the same input data.

- A single birth/death match will cost between 50¢ and $1.25, depending upon the requirement to update local offices and how the birth/death procedure is coordinated with the present transmittal of death data to HEW.

- Matching certificates of people who would be under 50 or 55 years of age if they were still alive appears to eliminate most false ID use and is much more economical than matching all previous deaths and births.

- The number of deaths that would have to be matched annually for false ID prevention is approximately 300,000.

- The number of deaths that must be updated from previous years is about seven million; of this number, about half are infant deaths for which the matching can be accomplished within a state. There is no available data on the number of adults who die in the same state in which they were born, but the number is probably significant, and intra-state matching of these people will further reduce the cost.

- The backdate search would have to be done manually, and the total cost of searching through 100 million records is estimated at 50 man-years.

- It is expensive to constantly update and maintain the duplicate birth files kept in local offices. There have been many arguments advanced for eliminating local offices issuance of birth certificates; birth/death matching provides an additional reason to eliminate this redundant issuance.

- There is a time delay loophole in the birth/death matching. It would not be practical to update birth certificate files more often than once a month; a clever criminal could take advantage of this time to acquire the birth certificate of a recently deceased person. This presents a loophole in the birth/death matching process as an effective deterrent to false ID proliferation.

- Birth/death matching has no impact on fraudulent applications for birth certificates of living persons.

SECTION III

POPULATION STATISTICS

This section computes the magnitude of the birth/death matching problem. The following demographic factors[1,2,3] are useful in calculating the age distribution of the American population and the ages at which they die.

1975 U.S. Population	215 million*
1975 Birth Rate	3 million/year
1975 Death Rate	2 million/year
1975 Immigration Rate	400,000/year

The peak population of the U.S. is expected to occur in two generations. Assuming a constant death rate and that the birth rate continues to decrease linearly until the population reaches its steady state maximum, the U.S. population at the start of the 21st century will be:

U.S. Population** year 2000+ = 240 million

Figure 1 is a plot of birth rate and death rate for the United States from 1910 to 1974. The trend for the last 20 years shows a relatively constant death rate and sharply falling birth rate. The U.S. has already reached the "replacement fertility rate" of approximately 2.1 children per woman of childbearing age, but the population will continue to grow because of the relatively large number of young people who have yet to begin their families. Figure 2 shows the distribution of U.S. population in 1970 and the predicted distribution in the year 2000. The anticipated long-term steady state population distribution becomes almost uniform from birth to age 50, then decreases linearly to age 85+. Figure 3 is a plot of death rate per 1000 population of each age group. Each point, with the exception of under 1 year, is the average of 5-year groups. The infant mortality is high, followed by a minimum death rate in the 5 to 20 age bracket. The older age bracket has a sharply increasing death rate with increasing age.

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*All figures have been rounded off.

**This figure is in agreement with the lowest estimate projection of Reference 4.

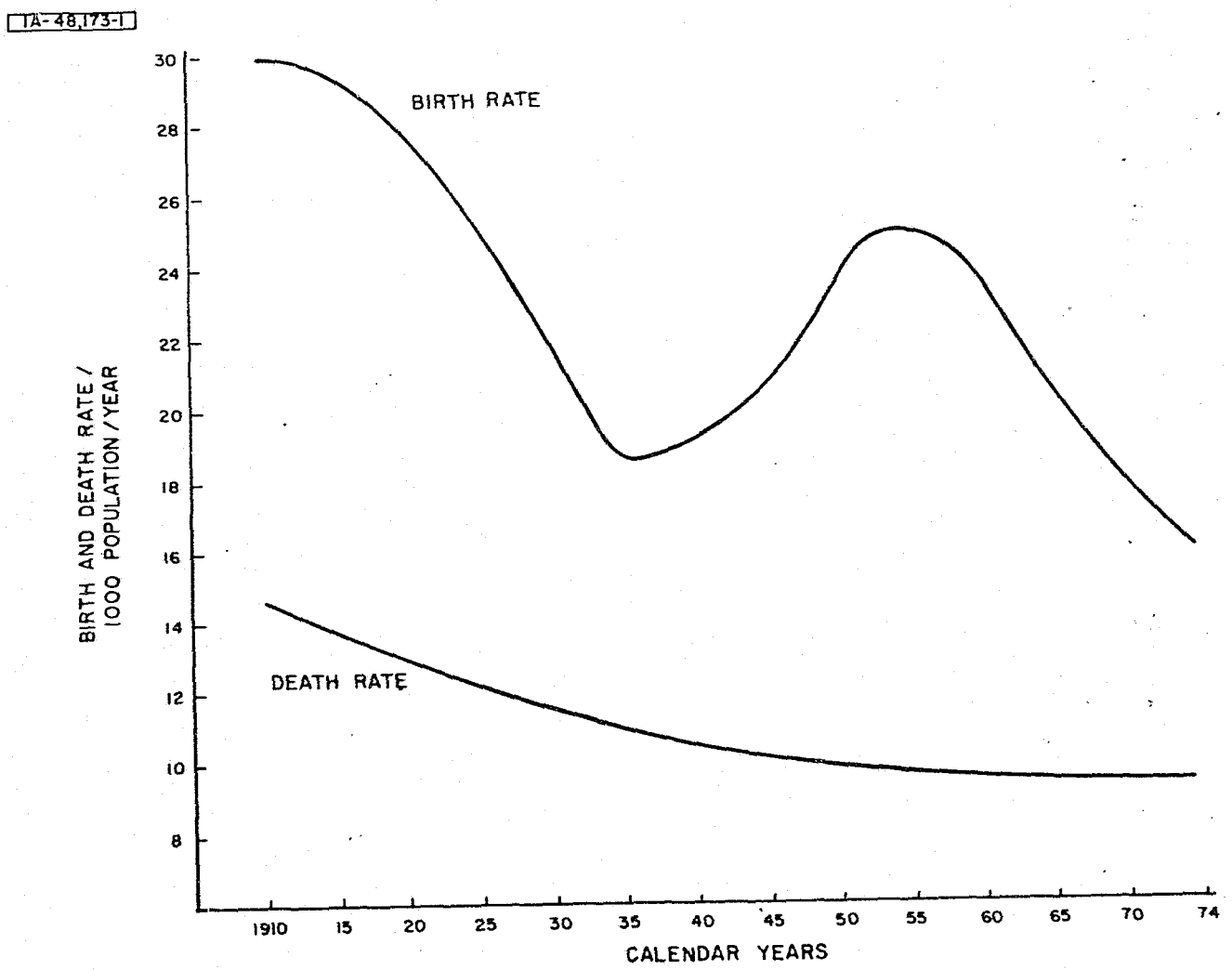

Figure 1. Birth and Death Rate Vs Time for U.S. (Source: Ref. 4)

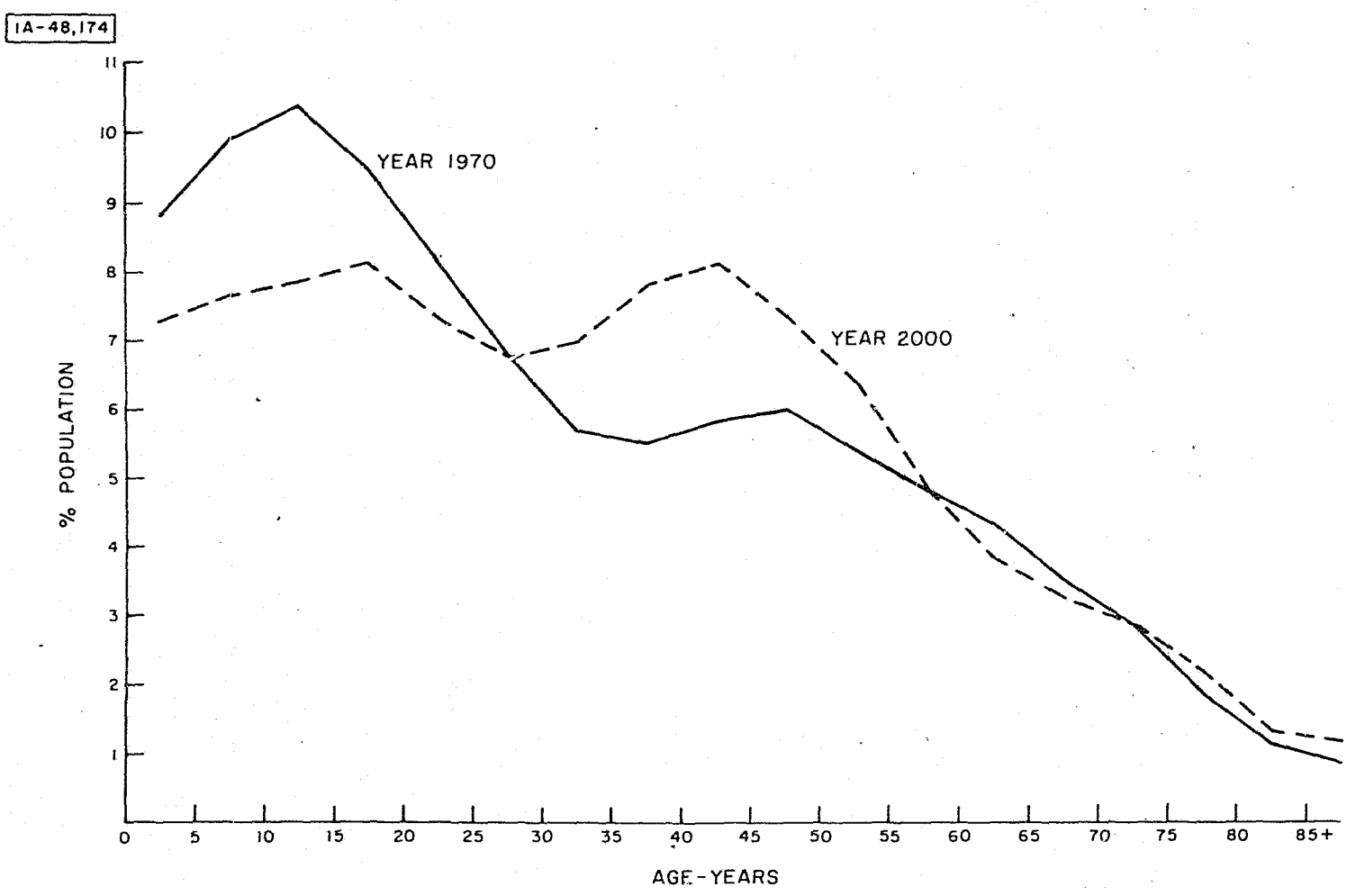

Figure 2. Population Distribution of U.S. (Source: Ref 2)

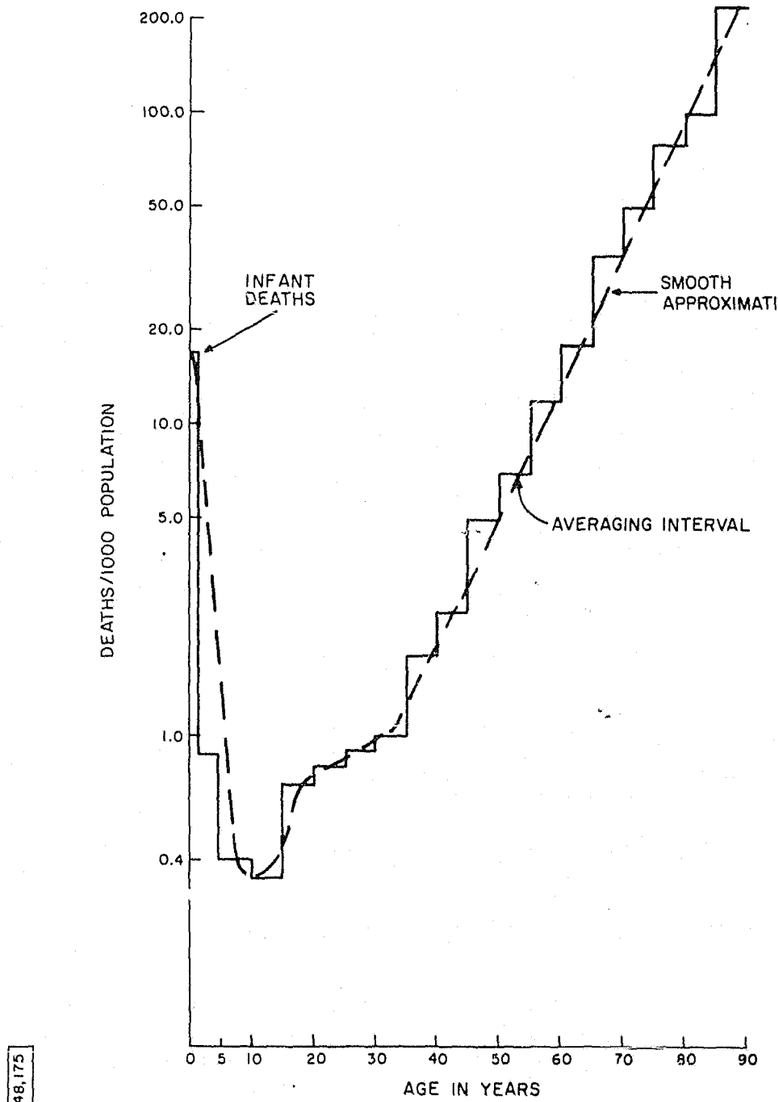

Figure 3. Death Rate Per 1000 Population - 1965 Average of Males & Females (Source: Ref. 3)

Using the data in Figure 2 and Figure 3, it is possible to compute the probability of an American dying at any specific age, and the cumulative probability of dying before any age.

The assumptions made in the following calculations are:

1. The deaths/1000 population for each age group remains constant. This seems reasonable as medical science has already reduced the deaths due to infectious disease to a low level and little progress has been made with respect to health deterioration with advancing age.

2. The population distribution in the year 1985 is midway between the 1970 and year 2000 distribution.

This distribution is used in recognition of the inevitable delay between a recommendation and its implementation.

The curve of the probability of dying at a given age is obtained by determining the number of people that die at each age:

$$N_{DY} = P_T \cdot P_a \cdot P_D$$

where:

N_{DY} = # of people dying per year at a specific age

P_T = Total Population

P_a = % population of age group

P_D = Probability of dying/1000

which is the product of Figure 2 and Figure 3. These values must be normalized since the probability of dying at some age is 100%; and the computation is independent of the total population. The cumulative probability of dying before a given age is the sum of the probabilities of dying at each previous age.

These computations have been made and are shown graphically in Figure 4 and Figure 5.

It is clear that some limit must be established for which birth and death records will be correlated or:

1. The cost of transmitting and processing this data will be large.

2. Birth certificates which are of no interest to false ID criminals will be processed.

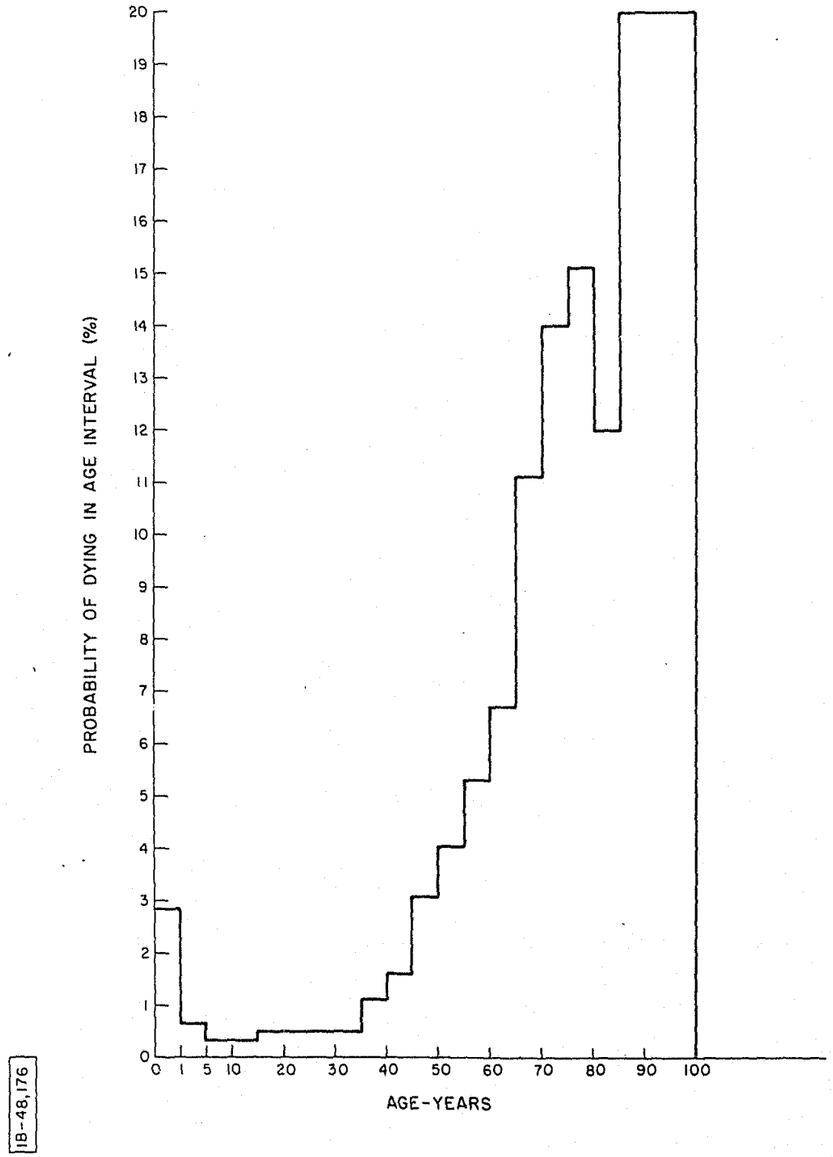

Figure 4. Probability of Dying Within an Age Increment vs Age in Years

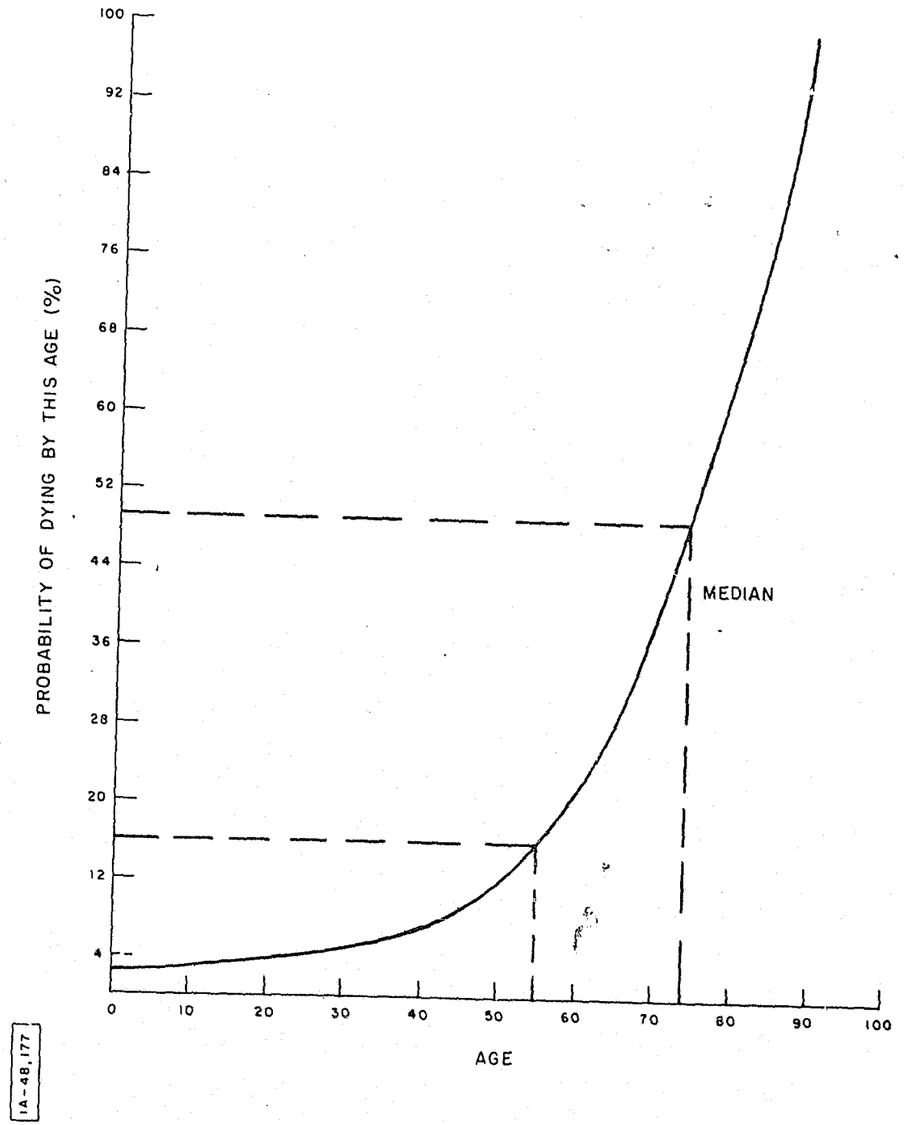

Figure 5. Cumulative Probability of Dying at Less Than a Specified Age

Therefore, it is recommended that the requirement for birth/death matching be:

> PROCESS AND MATCH ALL DEATH CERTIFICATES OF PERSONS WHO WOULD BE "X" YEARS OF AGE OR YOUNGER IF THEY WERE ALIVE TODAY.

The lower limit of "X" is determined by the estimate that most false ID criminals are in the 18 to 40 age bracket; therefore, "X" must be at least 40 years of age.

The upper limit of "X" is a function of how many "years of safety" is considered adequate against impersonation, and how rapidly the cumulative probability death curve rises. Common sense and Figure 5 indicate that an upper limit of 55 yields adequate safety and still excludes the major portion of deaths.

The number of death records per year that must be processed on a current basis can be calculated by multiplying the cumulative probability of dying at age "X" or younger (Figure 5) by the total number of deaths per year. A similar calculation can be used to compute the number of people who died in past years but would be "X" years old or younger if still alive. The birth and death records of these people should also be correlated to prevent impersonation; the number of records that must be "backdated" in this fashion is given by:

Total records = sum of all deaths per age group multiplied by ("X" minus age at death)

For example, if "X" is chosen to be 55 years, the total would include records of all people who died five years ago at age 50 or younger, those who died ten years ago at 40 or younger, and so on to include records of infant deaths (only) that are 55 years old. Calculations have been made of the number of records to be matched on a current basis and "backdated" for various values of "X". These calculations are presented in Table I below:

Table I

Maximum Matching Age Vs. Number of Annual Records

Maximum Matching Age	# of Deaths/ Year (Below Age "X")	Total Records Matched (backdated)	Total Records Backdated Interstate Without Infant Death Matching
40	140,000	4.5 million	1.6 million
45	180,000	5.3 million	2.1 million
50	240,000	6.5 million	2.9 million
55	320,000	8.0 million	4.05 million

The number of death notices which must be transmitted and processed each year is modest, varying from 140,000 to 320,000 depending upon the maximum age used. However, the backdating of information requires the processing of between 4.5 million and 8 million death records. The processing of these records will cost the nation an amount approximately equal to a year's issuance of birth certificates.

Infant deaths (under one year of age) affect the backdating cost in an unusual way and can be put in a separate category for the following reasons:

1. Infant mortality rate is higher than any other age group up to the age of 60 (Figure 3).

2. There is an excellent probability that these infants were born and died in the same state.

3. A program of intrastate infant birth/death matching for statistical purposes has been independently initiated over the years in several states.

If infant deaths are not backdated on a national basis but left as an independent state activity, then the interstate birth death backdating process is reduced by a factor of between two and three. These results are shown in column four of Table I.

The results previously obtained for backdating are inherently imprecise (although valid) because:

1. It was assumed that the death statistics were time invariant.

2. An "average" value of population equalling 200 million was used in combining all the death calculations.

3. The population distribution was assumed to be constant, and the 1970 distribution was used.

Using the individual death and population statistics, it was possible to recompute the nation's correct total annual death rate, which lends credence to the general validity of the results.

In Summary:

- The concept of matching births and deaths for only those persons who would be 55 years old or younger if alive at present appears to be practical and effective.

- The backdating processing costs are comparable to the cost of the nation's annual issuance of birth certificates. This does not include the search procedure needed to find the applicable death certificates (see section V). This cost can be still further reduced if the states do independent intrastate infant death matching. This is a "one time" operation.

- The continuing annual cost is based on the need to match only about 300,000 certificates per year.

SECTION IV

TRANSMITTAL AND PROCESSING OF DEATH CERTIFICATES

This section describes two practical procedures for matching the death certificate of a person with his birth certificate. There may be no relationship between where he was born, where he lived, and the place he died; his birth certificate(s) are stored in the state capitol and the local township and/or city of his birth. The birth/death matching problem cannot be solved as an isolated situation because there are many other documents and items of information which are sent state to state and state to Federal government. To be practical, any suggestion must incorporate the matching process into the existing network of information interchange.

DOCUMENTATION INTERCHANGE

Figure 6 is a flow diagram of the present method of transferring vital statistics documents between states and to the Federal government. The exchange involves the following:

1. The appropriate officials deliver the original vital statistics documents to the local registrar; for example, funeral directors supply death certificates and hospitals supply birth certificates. There is enough data on the death certificate to locate the deceased person's birth certificate (birth state, date of birth, etc.) and usual residence.

2. The local vital statistics registrar makes copies of these documents and, once a month, mails or delivers them to the state capitol.

3. At the State Vital Statistics Office, all the "state recorded events," which include births, deaths, marriages and divorces, are microfilmed. A common microfilming procedure is to put the documents into an automatic feeder machine and have the feeding process continually trip a 16 mm, black and white camera. A roll of 1200 negatives can be exposed in an hour and the total cost of the process is about $10 for film and developing plus 2 hours of clerical time. The states are paid 4¢ per image and for many years, all states plus Washington, D.C. have been making and sending the microfilm to the National Center for Health Statistics, U.S. Department of Health Education and Welfare (HEW). The film is developed in-house or sent to a photographic company and mailed directly to HEW. There is no

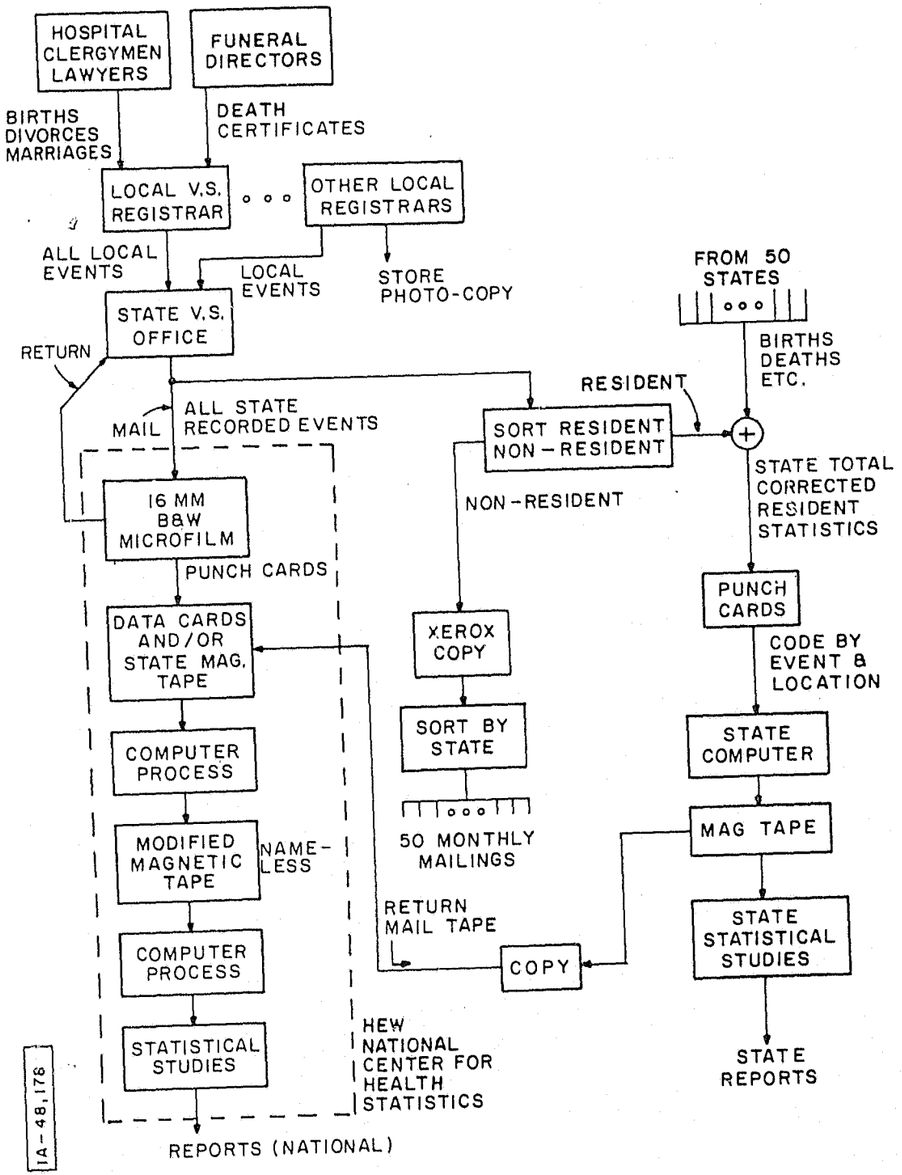

Figure 6. Flow Diagram - Transfer of Vital Statistics Data

subsequent feedback from HEW to the states except in the form of national vital statistics studies.

4. All the "state-recorded events" (births, deaths, etc., that happended in the state) are sorted into two groups: events that happened to in-state residents and events that happened to out-of-state residents. In this way, statistics of all the states can be published on the basis of all residents. Note that this sorting, and subsequent processing, has nothing to do with the birth state or birth certificate. A copy of the non-resident data is made and sorted into 50 files by subject's state of "usual residence". Every month, each state mails these data to the other 50 states for a total of over 2500 mailings. If no event in State A affects State B, no message is sent, leaving some uncertainty as to whether no event transpired or whether someone was negligent in State A.

In practice, major transmissions are between a state and its three or four immediate neighbors because a person is most likely to die or get married close to where he lives. However, this makes it all the more likely that an "event" in a remote state will be missed.

5. The state registrar combines the in-state resident events with the resident events received from the other 50 states to form a "total corrected resident" data file. Data from this combined file are punched on computer cards and require about three cards per entry event. Although identification data can fit easily on one card, much of the data is medical in nature and requires the extra space.

6. The cards are converted to magnetic tape via a computer. Magnetic tape stores data more efficiently than cards and can be read more rapidly by a computer. About 29 states now send HEW magnetic tape in addition to microfilm. It is anticipated that magnetic tape will replace the cards punched from the microfilm for HEW input data when complete agreement is reached on coding of "cause of death" for all conditions.

7. The states use this data to update their own records and do state statistical studies.

8. HEW receives the microfilm and magnetic tape data; the microfilm data are keyed and processed by computer. The magnetic tape data is used for demographic data, and the microfilm is used for "cause of death" data and for demographic data when magnetic tape is not available. Names are not included in the data processed by HEW computers.

CONTINUED

1 OF 2

9. HEW publishes many volumes of national statistical information annually which are used for medical studies, sociological studies, and by the states for comparative studies.

MODIFICATIONS OF THE PRESENT SYSTEM TO INCLUDE BIRTH/DEATH MATCHING

State-to-State Matching Birth/Death Linkage

In Figure 6, all "in-state events" were separated into resident and non-resident events by each state for all the other 50 states. An additional sorting and copy could be accomplished at this time, adding the death certificates of persons of appropriate age to the file of their birth state. Note that in this mobile society, there is little correlation between the birth state and present residence state. When mailing the non-resident event data, the death data for state of birth could be mailed in the same envelope, which would involve a minimal change, since no new information paths need be added.

Once a state receives notification of death, they must appropriately mark the birth certificate. Since the actual stamping (or making coded scratches on microfilm) takes very little time, the problem is primarily one of birth certificate location. The death certificates could be ordered (probably by computer) by date of birth or alphabetically, whichever was more convenient for the birth certificate search*. The cost of marking a birth certificate can be estimated, conservatively, as equal to the cost of issuing a birth certificate requested by a random applicant.

As previously mentioned, many states permit local registrars to issue certified copies of birth certificates. Thus, to prevent imposters from obtaining certificates of dead persons through local offices, these states would have to transmit a copy of the death data to the local issuance offices or legislate against local issuance. It is obvious that there is no point in matching births and deaths at 51 offices and not at the other 7000.

Federal Government Feedback of Death Certificate Information to the States

A centralized alternative to the interstate cooperative procedure is presented below.

*All states do not have the same filing procedure, which would require (ideally) a separate program in each state for each state. Although HEW has programs tailored to each state, it would not be practical to have separate programs in each state.

At the present time, the analysis performed by the National Center for Health Statistics is statistical only; it is impossible to identify any individual from these studies. By agreement, HEW can not use individually identified data for its statistical studies. In some cases, the tapes supplied by the states do not have the name of the individual; in all cases, HEW makes new tapes containing no name from the states' tapes and microfilm. The original tapes and microfilm are sent back to the states or destroyed within three years.

It is a simple software problem to use these data to generate death certificate listings which are organized by birth state if name data were included. These listings (and/or tapes) can be organized in whatever manner is most convenient for the individual state. Some states have their birth records sorted by birth date, some by county, some alphabetically. The program would determine the age of the deceased from birth date and death date and decide if the deceased was young enough to warrant birth/death matching; if so, the death record would be stored by birth state and a file for each state established. After all the data have been processed, the data for each state can be sorted so as to simplify the subsequent birth certificate search procedure. This sorting would not be practical on a state-to-state basis.

Although this procedure is practical and economical, there are several non-technical problems which must be resolved before it can become a reality. These are:

1. Each and every state must approve the sorting by HEW of death certificate data by name and birth state.

2. The format of the tapes supplied to HEW must be changed to include individualized name data.

3. The legislative rules governing HEW methods and procedures must be modified. The National Center for Health Statistics was chartered in July 1974 by an act of Congress, Public Law 93-353. This law must be studied to see if any revision is needed so birth/death matching can be coordinated centrally.

This procedure is attractive because the computer processing is done centrally, the data are available at the computing site, and the transmission paths between the Federal government and the states exist. The states will still have to search for and mark the birth certificates and solve the problems of distributing the death data to local issuance offices.

Interstate Transmission versus National Processing Center

Figure 7 is a gross simplification of how the birth/death data are transmitted and communicated intrastate, interstate, and to the National Statistics Center. In the drawing, only four states are used for illustration. A more accurate representation would show 55 jurisdictions* each having 54 lines going to the other states and 54 lines entering from the other states; a total of almost 3000 connections.

The interconnections between states are a source of unreliability and great expenditure because:

1. There are over 2900 potential individual sortings and mailings.

2. Each state must merge the inputs from the other states.

3. The formats of the data received are not consistent or optimum.

4. If no data is received from State Z, it is never known if State Z had no events to send or someone was negligent.

5. If several states fail to mail events, a conscientious state registrar may feel foolish doing all this work without receiving an equal amount of data, which may lead to loss of conscientiousness on his part, further reducing system reliability.

6. With the states doing the sorting for birth/death matching, another 2900 connections would be needed unless the "resident events" were sorted at the same time and the mailings coordinated.

In contrast, using a centralized source has these advantages in processing data:

1. The National Center already receives the data (except for names on some tapes). The data is used for health statistics and would be further needed if a National Death Index is established.

2. There is always an event in each state every month, so the National Center expects mail from each state; in the absence of mail, a query can be sent. Every state would receive complete data every month.

*New York City's files are independent of New York State; the other independent Registration Areas are the District of Columbia, Puerto Rico, Virgin Islands, and Guam.

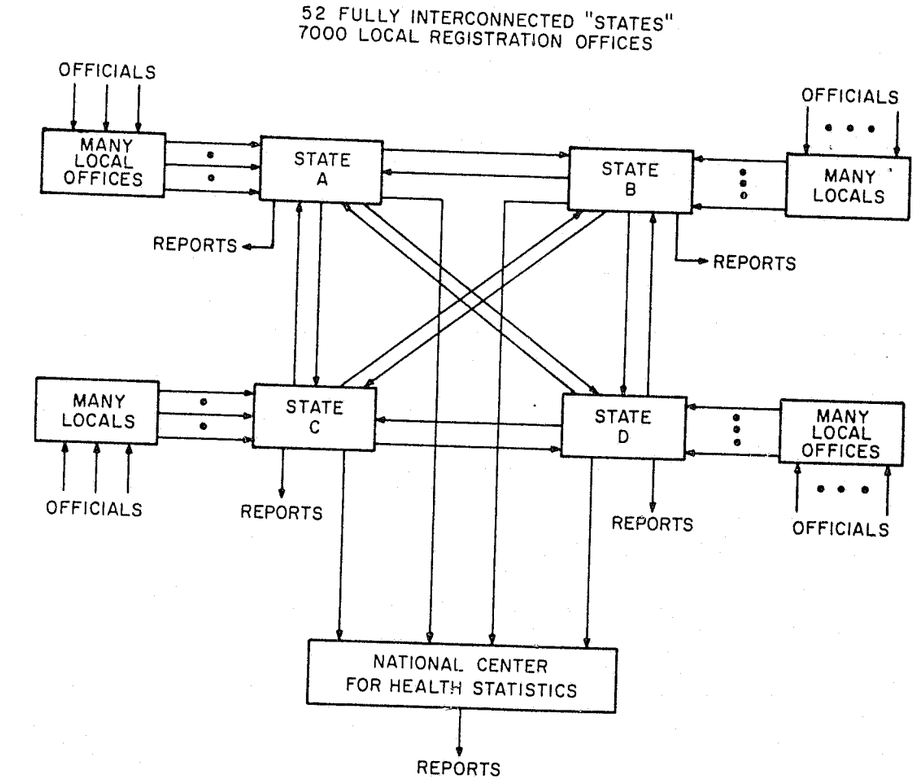

Figure 7. Information Exchange of Vital Statistics

3. Data processing is more economical in a large centralized facility.

4. HEW already has 55 individual programs "tailored" to each state's input format. Additional programs can be written to "tailor" the output.

5. In addition to death record sorting by place of birth, all resident events could be sorted and returned to the states, which saves state computer time and manual effort.

6. 110 mailings replace 2970 or 5940 mailings.

It appears reasonably clear that when birth/death matching is implemented, the flow of statistical data should be directly into HEW and HEW should mail all sorted deaths with other resident events directly to each state. For example, if a person who was born in Utah and resides in Texas dies while traveling through Arizona, Arizona would transmit death certificate data to HEW. At HEW, it would be sorted and a computerized record (list or data card) would be sent to Texas as the state of residence and Utah for birth/death matching. This new flow is depicted in Figure 8.

Modification of Local Issuance Offices

As discussed, birth/death matching may necessitate an additional 7000 monthly mailings from state to local offices because certified copies are issued from birth certificates stored in these local offices.

The arguments for state-only issuance and for state-plus-local issuance are listed below:

Arguments for State Issuance Only

1. Except for three New England states, the states have the original certificates (with birth number) and are presently issuing certified copies. More secure copies can usually be made from these original certificates.

2. Many states will computerize their certificate search and issuance procedures in the near future. This will lead to increased efficiency. It is not economical to computerize a small local issuance office.

3. There will be greater uniformity of birth certificate issuance. Redundancy and possible update errors will be eliminated. Death notices will not have to be sent to local offices.

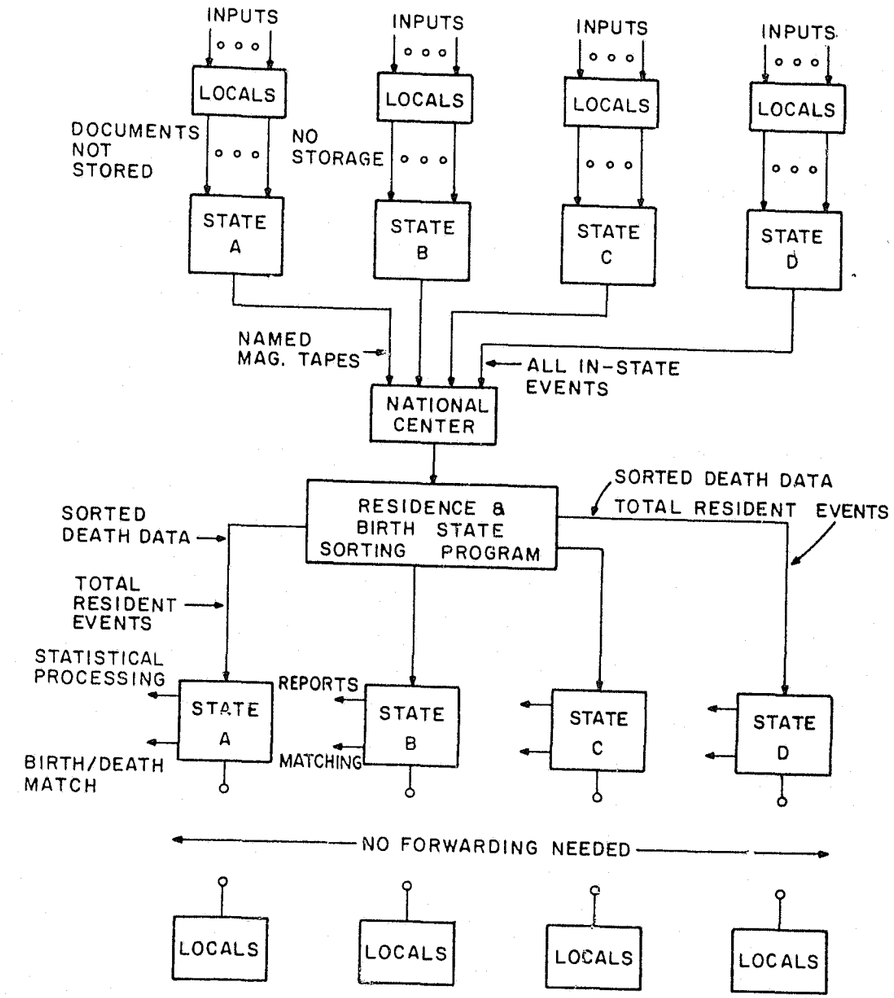

Figure 8. Simplified Information Diagram for Centralized Processing

Arguments for Local Issuance

1. Retention of local records offices and issuance is a strong political issue in many areas. The fees collected for certified copies are of course important to the counties and cities although they do not cover the cost of local offices.

2. There are fewer records per office, leading to a simpler search procedure.

3. The closeness of the office to some applicants permits more personal applications, fewer errors, and fewer mailings.

The public convenience could be served if the local offices accepted applications that they previously would have serviced and forwarded them to the state. Collecting applications in groups and forwarding them daily or semi-weekly to the state office would be more economical. The local community could receive a part of the fee for each application (say $2 local and $1 state), which would satisfy local revenue needs. Birth certificate files could be forwarded to the state or destroyed, saving office space that could be used in a more productive manner. By using this or a similar mechanism the states would be relieved of the task of forwarding death data monthly to 7000 local offices.

Backdating

The old vital statistics data does not exist in machine-readable form; HEW has not stored it, and the states have destroyed the punched cards and erased the tapes. No alternative exists but to manually search through volumes of data and repunch cards; the magnitude of this task is described in Section V.

SECTION V

PROCEDURES AND COSTS FOR DEATH RECORD CODING

This section defines the information needed for birth certificate/death record matching and specifies a coding procedure for economical, unambiguous matching. The flow of data from the states to the national government, back to the states, and then to local issuance offices is described together with realistic processing procedures and costs at each location.

INFORMATION CONTENT OF BIRTH AND DEATH CERTIFICATES

A "typical" birth certificate contains the following data:

1. Birth Certificate number (state issued only)
2. City, County, State of birth
3. Name of hospital
4. Family address
5. Full name of child
6. Date of birth
7. Sex
8. Type of birth (single, twin, triplet)
9. Length of pregnancy (complete weeks)
10. Birth weight
11. Father's full name
12. Father's race
13. Father's birthplace
14. Father's age
15. Father's occupation

16. Father's place of business

17. Mother's full maiden name

18. Mother's race

19. Mother's age

20. Mother's birthplace

21. Previous number of children in family

22. Doctor's name

23. Doctor's address

The death certificate contains the following data:

1. Death certificate number (no relationship to birth certificate number)

2. Full name

3. Complete address at death

4. Length of time lived in city or state

5. Marital status

6. Date of birth

7. Age

8. Usual occupation

9. Social Security number

10. Place of birth (State--not city or county)

11. Citizenship (which country)

12. Father's name (especially needed if deceased is a married woman)

13. Mother's maiden name

14. Name, address, relationship of informant

15. Place and time of death

16. Sex

17. Race

18. Cause of death (natural or type of illness)

19. Doctor's name

20. Burial location

A comparison of the two lists leads to the following list of parameters that might be used for matching purposes:

1. Full name

2. Date of birth

3. Sex

4. Father's full name

5. Race

6. State of birth

7. Mother's maiden name

Since use of term "race" is ambiguous and usually sensitive in nature, it is recommended that this parameter not be used. Therefore, a "match" can be made by the agreement of the above remaining six parameters.

CODING OF MATCHING DATA

Although it is anticipated that the birth/death matching procedure will be merged with the present transmittal of death data to the National Center for Health Statistics, the two requirements are not identical. The present death data stresses medical history and specifically eliminates personal identification. The birth/death matching requires identification but does not make use of the cause of death, therefore, the coding and costing is discussed independently from the present coding of death statistics. Pricing the coding costs in this manner is a conservative point of view, and a major fraction of the cost will be saved when the two activities are integrated.

A single data card can be punched (at HEW or under contract by the states) from the death certificate which contains the above six parameters. This card can be used for sorting by state, listing and duplication if needed. Such a punched card is shown in Figure 9, which represents a typical input.

- Columns 1-6 are the date of birth.
- Column 7 is the sex.
- Columns 8-10 are the abbreviation for birth state.
- Columns 11-80 represent the full name of decedent, mother's maiden name, father's full name.

The commas (,) are delimiters and this variable field technique should enable almost any sequence of three names to fit in 70 columns.*

Data processing centers have different procedures for punching cards. The three common sequences are:

1. Write data long hand on standard 80-column form from source certificate.

2. Punch card from standard form.

3. Verify card from standard form.

Since the policy at HEW allows card punching directly from the microfilmed certificate, step 1 would be omitted from cost calculations.

From personal experience and consultation with a data processing center, an 80-column card can be punched in about one minute (average for an 8-hour day). Verifying the card takes the same time as punching the card. Using a loaded salary rate of $8/hr or $16,000/year:

one punched card costs 2 man minutes = 25¢ .

*There are numerous techniques for handling names that overflow a single card; however, overflow is unusual and does not affect the probable costs considered here.

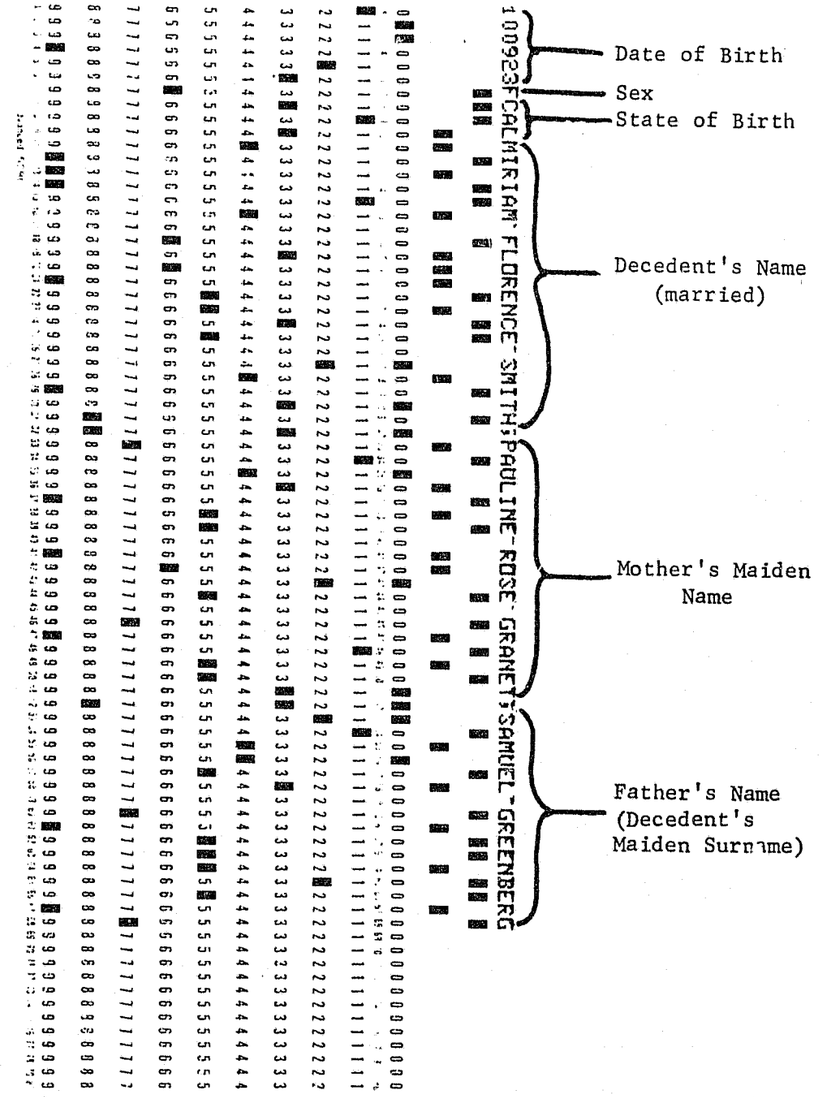

Figure 9. Death Certificate Data Card

DATA PROCESSING COSTS

Actual time in the computer to read and sort the data is negligible and any additional programming is a one-time cost that can be ignored in long-term cost calculations. No additional permanent computer storage is required.

Locating the Birth Certificate at the State Capitol

The mailing of the listed and sorted data from the National Center can be done at the same time the original microfilm is returned to the state capitol. This list can be used to locate and mark the birth certificate.

In an automated microfilm system, it takes about one minute to locate the birth certificate for an over-the-counter request. A coded scratch is used on the microfilm to denote death. When the certificates are stored in bound volumes, the search time varies from 2 minutes to 15 minutes, based on the correctness of the original data. Since the lists should be error-free and are already sorted in the most desirable way, the search time should be reduced from that of the present, random request procedure. Using an "estimated" search (and stamp) time of 4 minutes:

One located certificate at the state capitol costs
4 man minutes = 50¢ .

Communication with Local Issuance Offices

As described under "Transmittal and Processing of Birth Certificates," it is hoped that local offices will cease issuing birth certificates; in that case, no other costs would be incurred. However, if local offices do continue to issue birth certificates, the state must forward the death information to the local offices. Because the National Center only deals with the state capitols and the death certificate does not contain the information needed to specify the local issuance office, the National Center cannot sort data according to local office.

As the issuance clerks locate and stamp a specific birth certificate, they must record the identifying data from the birth certificate, which must then be sorted into bins that represent the address of the local offices. This duplicate copy (data) can be obtained by several procedures:

1. The clerk can make a copy of the newly stamped certificate and put the copy in the appropriate local office bin.

2. The clerk can record the six parameters longhand on a data card and file it.

3. When the national computer has sorted the data by states, a duplicate data card can be machine punched, which can be filed by local office.

The cost of this procedure is small, estimated:

One state sorted certificate for local issuance
= < 1 man-minute = 10¢ .

The sorted cards or certificates are mailed to the appropriate offices and then a local search must be made. Since the local records are less voluminous than those at the state offices, it is estimated that on the average

one local certificate search costs 3 man-minutes = 40¢ .

Cost Summary

The costs for matching a single birth and death are summarized in Table II. These figures are believed to be conservative and the costs below the dotted line will not be incurred if local offices do not issue birth certificates.

Table II

Birth/Death Matching Costs

Activity	Man Minutes	Equivalent Cents
National Center card punch	2	25
State birth certificate search	4	50
State sorting for local	< 1	10
Local search	3	40
	10	$1.25

The card punching procedure required of the National Center would also not be needed if the magnetic tapes presently supplied by the states contained personalized identifying data. Therefore, the cost of a single birth/death match probably will be between 50¢ and $1.25.

Backdating Death Records

It is unfortunate that the computerized death certificate data from previous years are not available. It will be necessary to repunch death certificate data using original bound volumes as the source of the information, and the search and selection procedure is different from finding a randomly requested death certificate. Approximately 100 million people have died in the last 55 years and these death certificates are stored in each state by date of death. A clerk in each state office must scan through all the death records to determine if a record is suitable for birth matching. Assuming that infant deaths will be matched only within a state, it follows that:

- If a dead person was born in the year of that volume, the clerk should copy or mark data for subsequent intrastate search.
- If the person was born less than 55 years ago, the death record should be copied for central processing.*

This process does not require any arithmetic computation and can be accomplished almost as rapidly as the birth date can be read.

A simple experiment was performed to see how long it takes to read a number on a page and then turn to the next page. A comfortable decision-making rate equals one page in four seconds. In view of this figure, the entire nation's death records could be sorted at the following expense:

> 100 million sorted death records would cost 50-man years or an average of 1 person working a 40-hour week for a year in each state.

About 3 million (see Table I for 50-55 year cutoff age) dead people will meet the logic established for central death matching and there will be 3.5 million intrastate infant death matches. The 3 million centrally processed matches can be treated in the same manner as the monthly submissions of recent deaths. The "infant death" birth certificates can be stamped "Dead" when searched for and found, and a copy of the certificate can be made for sorting and mailing to the

*There is still another step possible. The clerk can check whether the deceased was born in the home state. It will require some practical experience to determine if this additional step saves or loses time. There is no data available as to how many people are born and die in the same state. Note that this decision does not have to be consistent for each state.

appropriate local offices. It is estimated that it will take 15 seconds to move the volume to a nearby copying machine and make a copy. The above discussion is summarized in Table III.

Table III

Costs for Backdating Birth/Death Matches

Procedure	Man-Years	Cost
Total Search (100 million)	50	$800,000
Copy birth certificate (6.5 million)	14	$220,000
Central card punching from microfilm of interstate deaths	50	$800,000
States locate birth certificate from central return and infant deaths	200	$3.2 million
Local search	150	$2.5 million

The cost items under the dotted line would not exist if local offices did not issue certificates.

In summary, the annual national cost for birth/death matching would be between 10 man-years and 25 man-years. This estimate is based on 300,000 deaths per year, requiring between 4 and 10 man-minutes processing time. Major questions to be resolved are:

- How will birth/death matching be incorporated into the present death certificate transmittal procedure?
- Will local records have to be updated?

The one-time backdating costs will be between $4.8 million and $7.4 million (300 to 464 man-years); the largest variable is the need for updating of local office files. Even if the questions were resolved, the cost figures must be treated as rough estimates. Large variations are anticipated.

REFERENCES FOR REPORT B

1. Boston Museum of Science (Population Displays).

2. Charles F. Westoff, "The Populations of the Developed Countries," Scientific American, September 1974, pp. 109-120.

3. Haycocks, The Analysis of Mortality and Other Actuarial Statistics, Cambridge University Press, 1970.

4. Statistical Abstracts of the U.S.-1975-U.S. Dept. of Commerce, p. 51.

REPORT C

Recommended Federal Guidelines for Improved Driver's License Security

SECTION I

INTRODUCTION

In 1974 the U. S. Attorney General established the Federal Advisory Committee on False Identification (FACFI) to study the cost to society of false ID crimes and to formulate potential solutions for reducing the number of these crimes. FACFI has evaluated over 50 preliminary solutions and has approved those found to be effective suggestions and rejected those that were either ineffective or impractical.

In studying the problem of providing U. S. residents with a secure identification document, the Committee reached these conclusions:

- A federally-controlled national identification system is undesirable.
- Existing state-controlled and state-administered document systems should be improved to produce reliable identification documents.
- The participation by any state in upgrading document systems should be voluntary.
- Applications for documents by any citizen should be voluntary.
- The driver's license is one of the two (the other being the birth certificate) most common de facto identification documents and should be recognized as such. An improved ID system should be a modification of the present driver licensing system.
- The Federal government should provide guidelines to the states defining characteristics of the system that will improve its secure identification function. These guidelines must be compatible with the present issuance procedures of the State Departments of Motor Vehicles (DMV).

- The Federal government should provide financial assistance to encourage state compliance with these guidelines.

In attempting to establish initial guidelines, FACFI recommends adopting the most secure procedures presently followed by some states. This report suggests guidelines for actions by the states that:

- Enhance license security,
- Do not incur excessive costs,
- Are compatible with current state practices,
- Enhance personal privacy.

Many agencies and corporations associated with the nation's motor vehicle system supplied valuable information to the FACFI. They are:

National Driver Register(NDR)
National Crime Information Center (NCIC)
National Highway Traffic Safety Administration (NHTSA)
National Law Enforcement Telecommunications System (NLETS)
Department of Public Safety - Boston, Mass.
DMV - Woburn, Mass.
DMV - Albany, N.Y.
DMV - Washington, D.C.
DMV Computer Center - Boston, Mass.
Polaroid Corporation
DEK/Electro Corporation
3M Corporation
IData Corporation
American Bank Note Company

Although their assistance was indispensible, their cooperation should in no way be viewed as an endorsement of either this report or its recommendations.

SECTION II

RECOMMENDATIONS

Summarized below are the major recommendations proposed in this report for improving the security of existing state driver licensing systems. Sections III through VI examine present systems and procedures and identify modifications that improve the systems without compromising privacy rights, imposing excessive costs, or significantly inconveniencing the general public.

TO REDUCE FRAUDULENT APPLICATIONS FOR DRIVER'S LICENSE OR STATE ID

- Since no single document is foolproof, all applicants for a new driver's license or state ID should be required to provide several documents as proof of identity. Requiring a multiplicity of documents adds materially to an imposter's cost and trouble. A list of relatively secure IDs should be established by state consensus or a Federal agency to guide local registrars. A tentative list is suggested in Section III of this report, but a training program is also needed to sensitize registrars to false ID techniques.

- Temporary licenses should not be issued except in emergencies because these licenses are very subject to false ID abuse; some of the recommended changes in procedures should obviate the need for their issuance.

- All license renewal applications should be made in person, which will help eliminate perpetuation of a false ID.

- The identification procedure for renewal, out-of-state, and lost licenses should require a handwriting check against a signed identification document as well as a computer verification of the applicant's identity. The computer record should contain personalized information not listed on the license and therefore not available to anyone presenting a stolen or forged document.

- A duplicate license should be marked DUPLICATE and a computer record made of its issuance, making a stolen original license "unrenewable".

- Schools should encourage students in driver's education classes to register in groups for driver's licenses or state ID cards, thus increasing the efficiency of identity checks through school records and teacher endorsement.

- Whenever practical, address verifications should be made a standard part of the personal identification procedure.

- The application form should explicitly state that false identification and use of a false ID are crimes; the form should also specify the legal punishment for such crimes.

TO IMPROVE DOCUMENT SECURITY

Anti-Counterfeit Measures:

- A color photograph of the driver should be a mandatory feature of all state driver's licenses. A photograph is effective for imposter detection and makes counterfeiting more expensive.

- Every state's driver's license should uniformly include this personal data: full legal name, address, date of birth, height, weight, eye color, license number, sex, signature, and expiration date.

- Anti-counterfeit features should be explicitly evaluated when vendors submit proposals for license forms. This could also provide an economic incentive for improving anti-counterfeit technology. However, the Federal government should not recommend specific anti-counterfeit characteristics, which will vary as technology changes and which are a function of vendor production procedures.

Requirements for State DMV Computer:

- States should adopt the parameters for computer storage recommended by the American National Standards Institute (ANSI) with the addition of two "hidden" personalized parameters--the mother's maiden name and name of high school or grade school attended. Such data should be contained in computer printouts requested by inspectors. Public knowledge of this "hidden check" could act as a deterrent to imposters.

- A code which is a function of the personal data should be used to generate the license number.

- Although on-line terminals are valuable for rapid intrastate computer verification, each state has specialized needs; therefore, no Federal standard can be established.

Interstate Information Exchange:

- Because two applicable computerized information systems--the National Driver Register (NDR) and the National Crime Information Center (NCIC)--store data only on the "exceptional" citizen, they cannot realistically be expanded to include all-inclusive false ID information.

- Use of present interstate regional agreements and Federal guidelines such as the National Driver Compact, Uniform Venicle Code, and National Highway Safety Program is desirable and encouraged; however, additional guidelines for preventing impersonations should be developed.

- A study should be made of the practicality of including all state licensing offices into the National Law Enforcement Telecommunications System (NLETS) on a real-time basis. Such an arrangement would permit almost instantaneous (computer-to-computer) interstate exchange of motor vehicle and driver information, and if publicized could act as an additional deterrent.

TO ACT AS AN INCENTIVE, the Federal government should implement a cost-sharing procedure that will cover the start-up expenses of instituting a more secure driver licensing system. The cost sharing should be in proportion to the number of guidelines

followed by a state, and their opportunity to participate in such a program should terminate after a few years, which will act as an impetus to immediate action.

SECTION III

STATE DRIVER LICENSING SYSTEMS

IDENTIFICATION PROCEDURE IN APPLYING FOR A DRIVER'S LICENSE

Identification is the process of linking a person with a set of documents that "prove" the bearer has the necessary characteristics and qualifications to be entitled to the privileges and benefits for which he or she is applying. Applicants must be correctly identified at the application stage to be in one of the five categories listed below.

New Applicants

Included in this category are those applicants who have never before had a driver's license. Although a large percentage of these applicants are between the ages of 16 and 18 and are not likely to be false ID criminals, some older individuals also apply for a license for the first time. A new applicant is required to prove his ability to drive by taking a driving test, a written test, and an eyesight test. In addition, he must verify his name and age by presenting an identification document. The birth certificate is the most common document accepted as proof of name and age; forty-seven states require verification with a birth certificate. The successful applicant is issued either a final license or a temporary license, depending on the type of issuance system used by the state.

The birth certificate is not, however, a secure document because:

- There are no personalizing characteristics on a birth certificate that relate to an individual as a mature individual; infant footprints and fingerprints contained on some hospital certificates are useful for only a short time for identification purposes.

- In most cases, certified copies of the original certificate are made on ordinary paper, which is easily counterfeited.

- Because birth certificates are stored in the state, city or county of birth, often remote from the applicant, most applications are made by mail; therefore, the issuer never has an opportunity to validate the legitimacy of the applicant.

- The certificates have been, and in many cases still are, considered public documents, available for public scrutiny; therefore, an imposter has little difficulty finding enough information for filing a fraudulent application.

- There is almost no correlation between birth and death certificates; a criminal can find enough information from tombstone data or obituary columns to apply for and receive the birth certificate of a dead person.

- There is a wide diversity of birth certificate formats due to the multiplicity of non-centrally controlled issuance stations, making it virtually impossible for an inspector to spot an invalid format.

In summary, it is quite easy for an imposter to present a fraudulent birth certificate to a motor vehicle inspector and obtain a valid driver license. FACFI is aware of these loopholes and has approved recommendations to minimize these loopholes; however, it will be some time before these recommendations become a reality, and even then, a serious imposter will be able to "beat the system".

Applicants with Temporary Licenses

In some states (Massachusetts for example) a temporary license is issued prior to processing and possibly computer verification for a permanent license. For all practical purposes, the temporary license serves as identification until the applicant receives his permanent (2-4 year) license. If he receives his permanent license by mail, he is requested to destroy the temporary license.

A temporary license is printed on ordinary paper without any security features. Since the temporary license is often not collected after the permanent license is issued, it is often discarded in a haphazard manner. An imposter could easily fill out a fictitious temporary license or obtain a carelessly discarded temporary license. These temporary licenses are often accepted as proof of identity by merchants and, in addition, can be used within a reasonable time after their expiration to cause the issuance of a permanent license without further computer checks.

Applicants for Interstate License Transfer

In this mobile society, people are continually moving from one state to another. A new resident is usually required to apply within 90 days for a license in his new state. When he applies, his old license is accepted (in 47 states) as proof of identity and usually as proof of driving ability. The transfer applicant commonly takes a written and eye test and is granted a license as rapidly as the issuance procedure allows. In 45 states,[1] the old license is confiscated, to be either returned to the state of issuance for an update of their records or destroyed.

Sixteen states (Alabama, Arkansas, Connecticut, Illinois, Iowa, Maine, Maryland, Nebrasks, New Jersey, New York, Pennsylvania, Tennessee, Vermont, West Virginia and Wisconsin) use a piece of data processing card, without photo, for their permanent license. In many states, only minimal anti-counterfeit techniques are employed to make the license secure. By forging or stealing one of these licenses--made easier by the lack of anti-counterfeit feature--a criminal can obtain a valid photo license in another state. In 43 states a transfer license is issued before any computer check is made with the home state; an impersonator has, therefore, an easy route for obtaining a valid photo license in someone else's name.

If a state does not observe the Uniform Vehicle Code, or the Highway Safety Program #5, or the Driver License Compact--all of which recommend confiscating an out-of-state applicant's old license and returning it to the state of issue--an impersonator gains both the old fraudulent license as well as a new officially-issued license. However, some states destroy confiscated licenses, which then eliminates any further possibility for an investigation.

If a stolen license is used by an imposter to obtain a transfer license and then returned to the home state, the home state computer record of the person being impersonated is updated to reflect the ostensible move out of state. This means the legitimate licensee may not receive the normal renewal notice. More seriously, however, he can receive traffic violations made by the imposter. New York State receives about 100 complaints a week from people who are falsely accused of breaking the law.

If a returned license is detected by the home state as a forgery or the name used is fictitious, the license is returned to the new state. At this point, however, there is little possibility of tracking down the impersonator.

Applicants for License Renewal

When a valid license expires, a driver is informed by mail or is expected to be aware of the fact that it is about to expire (often four years from the date of issue, on his birthday). In a state using a photo license, the driver reapplies in person and receives his new license by just presenting his old license as identification. He is given an eye test, and if he is elderly or has an obvious physical handicap, is given special attention.

In a state without a photo license, an applicant receives a computer card in the mail informing him that his license will expire on a certain date. The driver makes the necessary correction to his computerized record and returns the form (with fee) to the motor vehicle bureau. In a few weeks, the license card is remailed to him officially stamped. He rarely makes a personal appearance at the DMV.

Once an impersonator successfully penetrates a system which relies on mail renewal, he will probably continue to receive valid licenses in his falsified name. Also, if a criminal steals a renewal notice from the mail, the form can be altered and the new license mailed to the criminal's post office address.

Applicants for a Duplicate License

About 10% of the licenses issued each year are duplicates,[2] replacing lost or stolen licenses. In cases where a wallet has also been lost or stolen, the victim may also have lost all his identification papers (credit cards, Social Security card, library card, etc.). An applicant can, in this case, be identified by filling out an application blank and having the data checked against the DMV computer record, which is convenient and effective if the registry has on-line terminals. The applicant then receives his license (or temporary license in some cases immediately.

Without immediately available computer verification, the registrar can make the applicant wait for computer verification or issue a temporary license on trust; this procedure is followed in some cases simply because of a person's immediate need of a car for making a living. The alternative is to delay issuing the license, which may cause a serious hardship to the applicant.

SYSTEM CONSTRAINTS

When studying the driver licensing system from the viewpoint of preventing false ID, it is possible to lose perspective and recommend rigid safeguards to prevent impersonation. Such safeguards could have a harmful effect on other aspects of the system and not satisfy the requirements of applicants. Before recommending techniques for preventing the issuance of false driver's licenses, the following realities must be considered:

- There are no reliable figures on the number of fraudulent licenses issued. There are 128 million drivers in the country; proposed solutions should not "punish" the vast majority of honest people in an effort to prevent abuse.

- In a typical motor vehicle bureau, long lines often cause public annoyance and waste many man-hours. Any solution that impedes the normal processing procedure will be unpopular with the public.

- After satisfying all requirements for licensing, an applicant for a new or a transfer license often waits several weeks to receive the license because of computer verification. Additional delays of this nature would be undesirable.

- The Federal government is in debt, and many states are finding difficulty paying their bonds. Recommendations that require large capital investments would be unrealistic.

- People in different socio-economic levels carry differing amounts and types of documentation. Recommendations for identification requirements cannot be tailored to conform to just the "middle class".

- Driving a car is technically a privilege, not a right; however, strict adherence to this distinction is a denial of reality. Many people cannot shop for food or get to work or do their job without a car. Denying a person a license because his documentation is not in accordance with the "letter of the law" is unjustifiable.

There may be no method of eliminating all fraudulent license issuances, certainly no cost effective technique acceptable to the public. Therefore, all recommendations must be evaluated on the basis of the following criteria:

- How effective is the recommendation in minimizing the likelihood of fraudulent issuances?
- What effect does the recommendation have to the public in terms of cost, convenience and privacy?

RECOMMENDATIONS FOR REDUCING ISSUANCE OF FRAUDULENT LICENSES

Documentation

It is the intent of this report to make recommendations to convert the driver's license, whose sole purpose ostensibly is to verify the driving privilege, into a more secure identification document. This modification is motivated by the absence of any other secure ID and the fact that the birth certificate is an inadequate identification document. Since no single document can assure valid identification for application, the following is recommended:

> ALL APPLICANTS FOR A NEW DRIVER'S LICENSE OR STATE ID SHOULD BE REQUIRED TO PROVIDE SEVERAL DOCUMENTS AS PROOF OF IDENTITY. A LIST OF RELATIVELY SECURE IDs SHOULD BE ESTABLISHED BY STATE CONSENSUS OR A FEDERAL AGENCY TO GUIDE LOCAL REGISTRARS.

This requirement is still open to some abuse because through alteration an impersonator can still beat the system. However, requiring consistency among several documents makes the imposter's problem more difficult. The State of Massachusetts has already anticipated such a procedure and requires at least three identification documents[3] in applying for a lost or duplicate license.

The following documents are listed as an interim guide for motor vehicle registrars to aid in applicant identification. The list is not exhaustive and the ratings are heuristic.

Relatively Secure Documents

color photo driver's license
passport
military discharge papers
home mortgage or lease papers
transcript of school records
non-resident alien registration document
birth certificate
military ID
state-issued photo ID
police pistol permit (photograph and fingerprint)
Federal agency employee ID

Moderately Secure Documents

divorce papers or court order
expired picture license
car registration
student ID
employee ID (with photograph and signature)

Insecure documents

non-photo driver's license
cancelled check with signature
checkbook with name and address
bankbook
insurance papers
marriage certificate
bills with name and address
Christmas club account
welfare card
charge card personalized with signature
baptismal certificate
gun owner permit (no identifying information)
Social Security card

There may be situations where no documentation is available, such as: a person who has lost his wallet and needs to drive to make a living, or a poor person who works at odd jobs and has never established credit, entered the Social Security system, filed an income tax return or opened a bank account. In such unusual cases, a verbal or written endorsement (identification) by a known public figure (e.g., school teacher, doctor, clergyman, selectman, etc.) may be acceptable. Also, the identification

Renewal & Duplicate Licenses

Renewal by mail reduces highway safety. There are many licensed drivers whose physical condition has deteriorated. Their vision may have deteriorated; their reflexes may have slowed down due to age or a disease; they may have been crippled by a stroke or accident. A license to drive should not be granted in perpetuity; it is therefore recommended:

ALL LICENSE APPLICATIONS SHOULD BE MADE IN PERSON.

This procedure will permit the applicant's eyes to be examined and any obvious physical incapacities observed, thus increasing highway safety. This procedure is already being followed in all the photo license states.

Those states that issue renewals by mail have the least secure systems against impersonations. Presently, once an imposter successfully penetrates the system, the system continues to perpetuate his false identity indefinitely. It is possible that the renewal notice has fallen into the hands of a criminal; or that the criminal uses a specific false license for criminal activities and uses his real identity in normal activity. Naturally, the renewal notice and old license will serve as one identification document, but requiring additional identification may trap some false ID criminals.

When it has been determined that a license has been lost or stolen, a duplicate license must be issued. It is recommended:

THE IDENTIFICATION PROCEDURE FOR RENEWAL, OUT-OF-STATE, AND LOST LICENSES SHOULD REQUIRE A HANDWRITING CHECK AGAINST A SIGNED IDENTIFICATION DOCUMENT AS WELL AS A COMPUTER VERIFICATION OF THE APPLICANT'S IDENTITY. THE COMPUTER RECORD SHOULD CONTAIN PERSONALIZED INFORMATION NOT LISTED ON THE LICENSE AND THEREFORE NOT AVAILABLE TO ANYONE PRESENTING A STOLEN OR FORGED DOCUMENT.

and:

A DUPLICATE LICENSE SHOULD BE MARKED "DUPLICATE" AND A COMPUTER RECORD MADE OF ITS ISSUANCE.

These procedures will be most effective in catching a criminal trying to renew a stolen license.

data in the driver license file should be accessed and his name and address cross-checked through the telephone book.

Temporary Licenses

Temporary licenses serve very little purpose and are a potential source of fraudulent application. The following is therefore recommended:

TEMPORARY LICENSES SHOULD NOT BE ISSUED EXCEPT IN EMERGENCIES BECAUSE THESE LICENSES ARE VERY SUBJECT TO FALSE ID ABUSE.

If a person is a new applicant, his life style is such that he can be without driving privileges for another week or two without hardship. If a person is an applicant for interstate transfer of a valid license, he has 60 or 90 days to apply for a new license and can therefore apply for his new license early while continuing to drive with his old license. Application for a license transfer can be initiated by mail or telephone, so that the necessary interstate checks can be made on the validity of the current license without requiring a visit to the DMV. Once these checks have been completed, the applicant can be scheduled for a single visit and provided with a permanent license as quickly as the license manufacturing process will permit. Temporary licenses do not appear to be essential for either new licenses or license transfers.

In the case of a renewal, the old license should be considered valid until the new one is issued. The old license should always be returned to the DMV. In the case of a lost license, a duplicate license can be issued immediately after computer verification (on-line terminal or telephone) of the application for a replacement license. Such cases should be given priority treatment to avoid the need for temporary licenses.

Some unusual circumstances may still require a temporary license. Every effort should be made in such cases to minimize the time required for photographic processing and computer verification. The applicant should be required to return the temporary license in person to receive the new permanent license.

Name Verification

Almost all schools have a driver education program for students between the ages of 16 and 18. It is particularly easy to verify the identity of these young people because the instructor knows the students and the student's record can be used to prove his age. It is recommended:

SCHOOLS SHOULD ENCOURAGE STUDENTS TO VISIT THE DMV AND REGISTER IN GROUPS FOR DRIVING PERMITS, LICENSES OR STATE ID CARDS.

This procedure would be instructive to students and increase the efficiency of identity checks.

Address Verification

The home or mailing address of the licensee appears on the driver's license issued by all states except Kentucky; the address is considered to be a valuable item of information by businesses which use licenses as identification when cashing checks or extending credit. The address is also important in the enforcement of traffic laws (e.g., to permit serving of summonses and other legal notices) and to assist in locating relatives should the driver be involved in a serious accident. To be consistent with the philosophy that the license should contain only that identification information which has been verified by the issuing agency, we recommend:

ADDRESS VERIFICATION SHOULD, WHEREVER PRACTICAL, BE MADE A STANDARD PART OF THE PERSONAL IDENTIFICATION PROCEDURE.

States which mail each permanent license to the address given by the applicant receive an implicit verification of address. In this case, address errors are usually corrected only through applicants' complaints of non-receipt. However, such non-receipt could result not only from an incorrect address but also from such factors as mail delay or theft by a third party. These problems are avoided when the license is presented to the applicant in person at the DMV; in this case, however, additional verification of address is very desirable. Address verification can be obtained by requiring the applicant to present a postmarked envelope bearing his address. (If a card is mailed to the applicant to arrange for license examinations or pickup, it is convenient to request that the card be brought to the DMV.) If the applicant has a home telephone, his address can usually be verified through a local directory. Although Post Office boxes serve many people as legal mailing

addresses, they are usually not regarded as satisfactory descriptions of home address. A local address should be requested in addition to P.O. box number, verified whenever possible, and should appear on the license as well.

We recognize that these simple precautions can be overcome by persons who intend to move (without leaving a forwarding address) when they have received their licenses. However, we believe that address verification is generally useful and will enhance the reliability of the driver's license as an identification document.

SECTION IV

DOCUMENT TYPES AND ISSUANCE PROCEDURES

CHARACTERISTICS OF EXISTING STATE-ISSUED DRIVER'S LICENSES

The following list accounts for the data that can be found on various state-issued driver's licenses.

- Full name is included in all states.
- Present address is included in all states but Kentucky.
- Date of birth is included in all states.
- Driver's license number is included in all states.
- Signature is included in all states.
- Expiration date is included in all states (renewal period 2-4 years).
- Sex is included in all states but Massachusetts, Pennsylvania, Missouri, New Mexico and Minnesota.
- Height is included in all states but Michigan, North Carolina and Pennsylvania.
- Weight is included in 41 states.
- Eye color is included in 38 states.
- Hair color is included in 20 states.
- Fingerprint is not included in any state.
- Race is no longer used in any state.
- Thirty states list the Social Security number; in 11 of these states, the SSN becomes the license number.

License Number

Each state has a unique numbering scheme for their license. The numbers may contain alphabetic characters and up to 15 digits. Usually the number is sequentially assigned without any coded meaning. In 17 states, the license number has a coded relationship to the registrant's personal identifiers (name, address, birth date, etc.). These codes can be easily memorized by inspectors and are correspondingly easy for any tamperer or counterfeiter to break. However, coding of the license number helps detect and possibly deter amateur counterfeits.

Since no central coordinating computer is recommended, there is no need to recommend any specific driver license numbering scheme. However, some numbering schemes (Soundex* for example) use the personal data to generate the license number. This is an excellent procedure because it provides the inspector additional ability to detect tampering or counterfeit. It is therefore recommended:

A CODE WHICH IS A FUNCTION OF THE PERSONAL DATA SHOULD BE USED TO GENERATE THE LICENSE NUMBER.

Tamper Resistance

There is almost a perfect correlation between a license being tamper resistant and the license having a color photograph. Almost all licenses are made of heavy paper (two are embossed plastic) but when a photo is added, the paper is laminated in plastic. Although this is done to protect the photo, it serves the important additional function of making it difficult for any alteration to go undetected. As of February 1976, none of the licenses were made of a specially designed secure substrate.

*A coding scheme that converts personal data to a reduced number of alphanumeric characters.

Color Photo and Non-Photo

A tabulation of use of these two types of license shows:

Type	Number of States + Washington, D.C.
Non-photo	15
Color Photo	36

Although the format of the licenses differs in detail, the general formats are similar. They are a convenient wallet size and contain (as shown in Figure 1):

- A photo in one corner.
- Name and address.
- Personal data, expiration date plus license type.

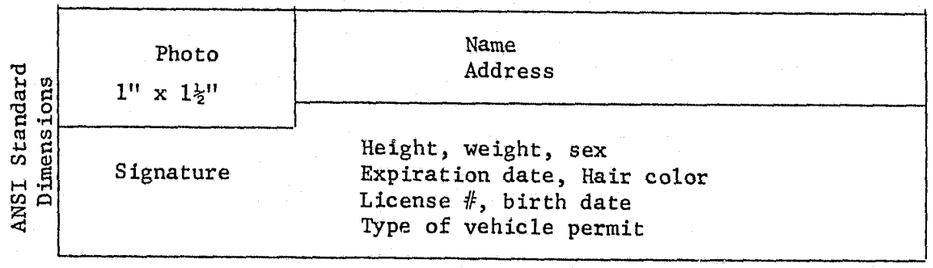

Figure 1. General License Format

The primary differences between the photo driver's license and the non-photo driver's license are:

- Although non-photo licenses could be laminated in clear plastic, they have not been, presumably in the interest of economy. This makes it much easier to tamper with the non-photo-license, making the data on the license or ownership more suspect than the laminated photo license.
- The size of the non-photo license is not completely standardized; however, the majority of the licenses measure 2½" x 3 3/8". The longer dimension conforms to one dimension of a standard data processing

card (3¼"), which simplifies the computer processing procedure, and is still convenient for wallet insertion.

- The format of a non-photo license is more varied than the photo license because the size is larger. The information content is similar.

These differences generally apply also to state ID cards where they are used. Thirty-three states offer a state ID card and nine additional states have introduced legislation to offer its residents this ID.

THE CASE FOR PHOTO LICENSES

There are 36 states that presently issue a photo driver's license. Five additional states have passed legislation enabling the Commissioner of Motor Vehicles to issue photo driver's licenses, and seven more states are actively considering legislation that would enable the issuance of photo driver's licenses. Considering the fact that 20 years ago there were no photo driver's licenses, the popularity of their use is evident. The advantages of a photo license have become apparent to the public and their political representatives; however, since 16 states still issue "computer print-out" non-photo licenses, it is necessary to compare the two types in order to show the superiority of the photo license for decreasing fraudulent license use.

There are two advantages of a non-photo license.

- The incremental cost of each license is about 2¢, compared to an incremental cost for a photo license of approximately 50¢.

- The renewal procedure can be accomplished completely by mail. Although it is theoretically possible for a photo license to be renewed by mail, it is not done in any state.

The advantages of a photo license are overwhelming. Opinions expressed by law enforcement personnel verify this. "People no longer hire professional driving test stand-ins to obtain a license," an inspector explained. Before the photographic license was adopted, he relates, people who felt they could not pass the driving test, or would be refused a license for some

other reason, would hire someone to obtain a license for them. The photo license has stopped this practice.

A spokesman for the Highway Patrol in North Carolina also credited the photo license with reducing the number of people who would be driving with a revoked or suspended license. He says:

> "The photograph just makes it too risky. These people used to drive with a borrowed, stolen, or counterfeit license, and we had no way of knowing it. Since we began issuing licenses with the driver's photograph on them, the number of drivers using counterfeit and borrowed licenses has been reduced by about 60 percent."

The photo license also makes the officer on patrol feel more secure, according to the Highway Patrol. One patrolman expressed it this way:

> "When I look at a license that has the driver's photograph on it, I can be pretty sure that the guy I'm talking to is the guy that the license says he is. When I check him out with my dispatcher and get a good report on him, I know I'm not going to have any problem. Before, you could never be sure who you were talking to or what kind of trouble you were going to have with him."

The highways are safer when a state issues a photo license and reexamines the renewal applicant for obvious physical defects (eyesight, partial storkes, loss of capability due to age). A Polaroid Corporation study estimated:

> "An analysis of the traffic fatality rate per 100 million miles traveled by private passenger vehicles in 1970 and 1971 shows that states combining driver reexamination with photographic driver's licenses have reduced traffic fatalities much more than states that do not reexamine, or which do reexamine but do not issue a photographic license."[4]

Approximately 50% of the serious automobile accidents are directly or indirectly involved with alcohol, and insurance rates reflect the fact that young people have more accidents per capita than older people. Motor vehicle officials claim that young men alter their non-photo license so that they can appear to be of drinking age. They also borrow their older brother's license to go drinking. It is inherently easier to impersonate

someone if the identifying document does not have a photo, and non-photo licenses are easier to alter than laminated photo licenses. For the same reasons, it is also easier to defraud a merchant with a non-photo license for identification.

A study was made for the State of Florida[5] of costs incurred by changing to a color photo license. Each applicant was assessed an additional 50¢ at renewal or initial license application. The computation of cost was conservative and included factors such as address verification, driver history verification, and additional renewal processing costs. Almost no savings from improved procedural techniques was included in the accounting procedure; therefore, the results of the study were conservative with respect to the 50¢ fee (once in 4 years) being adequate.

The results are listed in Table I below:

Table I
Cost Assessment for Color Photo License (Florida)

Year	Annual Surplus (Deficit)	Cumulative Surplus (Deficit)
1973	($208,000)	($208,000)
1974	($184,000)	($392,000)
1975	$193,000	($199,000)
1976	$213,000	$ 14,000
1977	$238,000	$252,000

The figures show conclusively that an additional cost of 12½/year per driver adequately covered the cost of a color photo. The initial costs were recovered in 4 years.

Since it is doubtful that any Commissioner of Motor Vehicles or legislator would argue against the desirability of a photo license, why don't all states have photo licenses? The answer is money. Although the driver's license fee adequately covers the cost of the license, the fee for it goes into the state's general fund. In fact, there is not a net cost but a net saving to the public. Highway safety and false ID crime is reduced by use of a photo license. The problem is finding a suitable financing mechanism that considers the political relationship between the Federal government and the states, and the scarcity of state money. It is recommended in this regard:

THE FEDERAL GOVERNMENT SHOULD IMPLEMENT A COST-SHARING PROGRAM THAT WILL COVER THE "START UP" EXPENSES OF INSTITUTING A MORE SECURE DRIVER LICENSING SYSTEM. THE COST SHARING SHOULD BE IN PROPORTION TO THE NUMBER OF FEDERAL GUIDELINES FOLLOWED BY A STATE AND THEIR OPPORTUNITY TO PARTICIPATE SHOULD TERMINATE AFTER A FEW YEARS, WHICH WILL ACT AS AN IMPETUS TO IMMEDIATE ACTION.

Some cost sharing should also be applied to those states that have already anticipated these Federal guidelines and are presently using photo licenses with anti-counterfeit features.

In summary, a photo license is desirable from the standpoint of:

- Highway safety,
- Law enforcement, and
- Reduction in false ID crimes.

Also, we have shown that cost effectiveness is not at issue in making a change to the photo license. In a very short time, the public saves many times the additional cost of issuing a photo license.

PROCESSING METHODS FOR PHOTO DRIVER'S LICENSES

Slightly more than half of the 36 states which issue photo licenses use a "centralized photo negative" process and the remainder use an "instant photo positive" process. Both the "central" and the "instant" process are produced with photographic equipment having a feature called "split optics" which has the capability to simultaneously record, on a single photographic medium, a portrait of the license applicant along with information and signature from a data card or license application. Although this photographic method is the same for both processes--central and instant--significant differences exist in the methods of photographic development and license distribution.

In the central process, an application or data card is generated during the course of the applicant's examination or renewal procedure. This card is then placed into the camera where a composite image of both the applicant and the data card is recorded on roll film. The applicant is then given a temporary permit, which he utilizes to exercise his driving privilege

until such time as the state is able to complete license processing at a central location and mail the finished permanent license to the applicant.

In the "instant process", a data card or application is similarly prepared during the course of the examination or renewal procedure. This card is then placed in the camera and a composite photograph is made of the applicant and data card. The "instant" time now required for completion of the license is sixty (60) seconds for print development and approximately one minute more for operations concerned with the cutting, lamination and sealing of the photograph into a finished license. The license is handed to the applicant, and records are subsequently processed and files updated at the state's central records repository.

Both processes have their advocates and both satisfy the licensing needs of the individual states. In this section we will itemize the advantages and disadvantages of each with respect to:

- License security,
- Public acceptance, and
- Law enforcement and administration.

No conclusion will be drawn, however, about the superiority of one system over the other.

License Security

Temporary Permits

With the central process it is common to issue applicants a temporary permit until such time as they are able to receive a completed license. The disadvantages of a temporary permit have been discussed previously.

Temporary permits are not generally required in an instant process. However, in at least one state (Massachusetts), in spite of the presence of on-line terminals and an instant photographic process, a temporary permit is issued for 60 days for new applicants, out-of-state applicants, and for duplicate licenses. This delay permits the check of the applicant's file by mail with the National Driver Register. Subsequently, the applicant

must revisit the DMV to be photographed and receive his photo license. The advantage and convenience of an instant process can only be realized, therefore, if suitable computer terminals and/or communications facilities are available and used for license verification.

Central File Verification

Delay is inherent in the central process, so time is available to verify an application at a central location before a license is returned to the applicant. With an instant process, it is necessary to adopt special procedures and/or develop communications between examining stations and the central office so as to assure verification of an applicant's status prior to hand delivery of the permanent license. In practice, most states using a central process verify all applications, whereas states using an instant process may restrict this verification to selected types of license applications, such as originals and duplicates. For renewal applicants, states using an instant process verify the applicant's record before sending out the renewal notice.

Susceptibility to Fraud and Theft

Unless special efforts are devoted to consideration of the possibilities for fraud and camera/film theft, the instant process affords an opportunity for improper activities by virtue of the fact that the entire photographic process, e.g., the camera and validation plates, are located in numerous field stations throughout the state. The film used in the instant process is identical to the film used in recreational photography and therefore a tempting target for theft. In addition, with many people able to make complete, valid licenses, the probability of fraudulent issuance by dishonest employees cannot be ignored.

Conversely, the central process divides major components among several locations. Cameras are located in the field; validation is applied to photographic licenses during film processing; and licenses are laminated and completed at a central facility under close supervision. This dispersion of equipment and personnel minimizes the probability of fraud and theft.

In both processes, the all important identification procedure is done by a single employee. The remainder of the issuance

procedure is automatic and mechanical. If this one employee were dishonest, both systems would be compromised.

Address Verification

Some motor vehicle authorities believe that the mailing and subsequent delivery of the license to the applicant is proof that the address was properly given and recorded. Others believe that the successful delivery of the license is not significant because of the high mobility of the population and the ease of making prior mail-drop arrangements.

A more preferred procedure would be to validate the applicant's correct address before a license is issued. This additional check (of records or documents) is commensurate with the examiner's responsibility to verify the applicant's identity. Efforts to support this activity may be enhanced in an instant process if it is recognized that address verification is performed solely by the examiner. As discussed in Section III, other changes in documentation of application may be needed before this procedure can be accomplished expediently.

Mail Delivery

While it is not a common occurrence, licenses do get lost in the mail and may fall into unauthorized hands. The mailing of licenses is a primary characteristic of the central process. When loss occurs, the subsequent search for the appropriate negative is expensive and annoying.

Applicant Identification

If the identifying documents of the applicant are not carefully and thoroughly checked by the issuance inspector, the applicant may be granted a valid driver's license although he is impersonating a real or fictitious person. Both systems are vulnerable to inadequate initial identity verification procedures.

Anti-Counterfeit Characteristics

Forty-four states claim to have licenses that are counterfeit- and/or alteration-resistant; therefore, it is possible to use anti-counterfeit techniques in both central and instant issuance. However, a central process has the inherent advantage of centralized equipment. Specialized, high capital investment in photographic equipment can be employed because it does not have to be purchased in quantity; for example,

a high resolution film can be used that produces a photo positive of a quality difficult for a counterfeiter to match. In California, a proprietary glass bead reflective laminate is bonded to the license in a production manner. This installation may be impractical or uneconomical to implement at a multiplicity of issuance stations. It is mandatory that the laminate be protected from theft, which is more easily accomplished with central processing.

Public Acceptance

Public Convenience

From the standpoint of public convenience, the instant process is more satisfactory than the central processing system. In an instant system:

- A qualified license applicant receives his license within two minutes of the picture taking.
- There are no temporary permits required.
- There are no licenses lost in the mail.
- An unsatisfactory photographic image is immediately obvious and the picture can be retaken. A camera malfunction is also immediately detected. There does not, however, appear to be any significant difference in the quality of the photograph from the two systems.

Two secondary disadvantages to the instant process are:

- The instant process requires a short time for cutting and laminating; an applicant can leave immediately in the central processing system.
- The majority of instant photos have two (or four) pictures per photo positive. When the issuance demand is low, an applicant may have to wait for the next applicant so that the issuance office does not waste half a photo positive.

Cost

From the viewpoint of the total cost necessary for production of driver's licenses, including systems ancillary to the document itself, analysis[5] shows that the cost of both

systems is approximately equal. This analysis is supported by the observation that, in a highly cost-competitive market for state license contracts, each process has captured a substantial share. However, in the last three years mail costs have increased from 8¢ to 13¢ benefiting the instant process in competitive bids.

Exact costs will vary according to the specific product required by the state, the methods employed, and the issuance procedures followed. The price paid by the state to the vendor producing the license document is determined in a highly competitive bidding situation. This cost varies from 25¢ to 45¢ per license depending upon the exact specifications and annual volume. The total cost of the license issuing system includes additional factors such as rental of communication lines, computer time, building depreciation, office space, parking space, etc., costs that may exceed the incremental cost of each license and which are lumped together as "overhead". These items are usually not considered and are mentioned here so the reader will be aware of these "hidden" costs. Several components of both processes that affect total costs are listed below.

Address Verification. In both systems, the correct address is important for mailing renewals and activities related to law enforcement. In the central process, the correct address is necessary so that the applicant will receive the license on the first mailing. The cost for time to verify address and identity is well spent.

Internal Handling. The central process requires several steps not required in the instant process. These are:

- Mailing and receipt of film canisters from examining stations to the central office.
- Establishing records at both examining and central office regarding this mailing and receipt.
- Transmitting the film canister from the central office to the central laboratory with attendant records.
- After processing the film and printing the licenses, verifying and recording the fact that all appropriate licenses have been printed and that any licenses that should not be mailed have been pulled prior to insertion in envelopes.

- Performing a final quality control check at the time of license insertion into specially constructed envelopes for small-size documents.
- Sorting by zip code and calculating that the totals are correct.
- Stamping, final counting and mailing.

Mailing Costs. Mailing costs in the instant process are minimal. In a central process, the stamp costs are 13¢, the envelope costs 1¢, and the handling approximately 2¢. This adds up to between 40% and 50% of the cost paid to the vendor for producing the license. There are also additional costs for maintaining files of undeliverable licenses and "second time" mailings.

Examining Station Procedures. While the central process requires additional handling at the central office, the preparation and delivery of finished driver's licenses to qualified applicants at local examining stations using the instant process requires additional work, such as film development, cutting, and lamination. Film accounting procedures also necessitate additional recording of all photographs taken.

The net effect of performing the finished license production in the field is to utilize manual labor at numerous locations instead of high-speed production equipment at one central facility. In some stations, this necessitates hiring additional people, while other stations are able to absorb the increased workload. The extent of the cost increase for additional personnel can only be determined on a station-by-station basis with consideration of existing and projected workloads. The central process does not require a similar increase in work effort at examining stations since film processing and final license manufacture is performed at the central laboratory.

Law Enforcement & Administration

An important characteristic of central processing is the existence of a file of negatives of the licenses issued.* Law

*This could be accomplished with an instant process by having a conventional camera photograph the subject (or finished license) at the same time that the instant picture is made, which would increase the license cost by approximately 25¢. Alternatively, a back-up instant print could be taken and filed, which would be expensive and not have the flexibility of a negative.

enforcement and issuance agencies view this file as an advantage for the two reasons described below.

Criminal Identification Photos

If the owner of a driver's license is suspected of a crime, the negative of the license can be accessed and another copy made. In addition, the picture portion can be enlarged (to 8" x 10" for example) so that the officer can obtain a clear, easily identifiable print. This procedure is expensive and time consuming and is done primarily for persons suspected of committing felonies. It is possible, however, to use a 16 mm black and white auxiliary system since the higher quality 35 mm photograph is not necessary for this function.

Lost Licenses

If a person loses his license, he can request a duplicate license without being rephotographed. The negative can be accessed and a new license printed and mailed to the applicant. This is not a cost-effective procedure as it may take several hours from the initial request to locate the negative; however, it has the potential of eliminating the inconvenience of a personal appearance. Minnesota is the only state that presently reissues licenses in this manner.

Although a new license could be reissued without a new photograph, normal changes in a person's appearance, address, change, and reissue dates make use of a negative for renewals undesirable. Having an applicant apply for a license in person permits reinspection and simplifies the information content of the photographic negative. All photo license states require in-person renewals. An important advantage of in-person renewal is reexamination to determine if the applicant is still fit to drive.

It should be noted that a part of the public may view the central file of negatives, accessible to law enforcement officials, as an invasion of their privacy.

Summary and Conclusions

The principle advantages of the instant process are:

- Public convenience in immediate receipt of license.
- Saving of postal fees.

- Security in elimination of temporary licenses.
- Convenience and cost savings in eliminating applicant recall due to "eye blink" and equipment malfunction.

The principle disadvantages of an instant process are:

- Difficulty of performing adequate computer checks at license issuance, a situation that could be improved with the increased use of an on-line terminal.
- The absence of a negative file of licenses (an advantage if considering loss of privacy).
- Lack of equipment security and temptation to fraud inherent in a complete process located in many places.
- The difficulty of performing superior photography and counterfeit protection in a distributed environment in contrast to a specialized centralized facility.

The advantages and disadvantages of a centralized process are the inverse of the instant process. Both systems require adequate inspection and identification procedures in the application phase of license issuance.

The choice of which issuance procedure to use depends upon individual state requirements and the subjective opinion of motor vehicle officials as to which advantages are important and which disadvantages are unimportant. The present competition is advantageous to the public. Both systems generate attractive, durable licenses at a modest cost. The competition is now being extended to include security against counterfeit and we can be confident of technological improvements in the near future. It is anticipated that more companies will enter the competition and more states will change to photo personalized driver's licenses.

COUNTERFEIT AND ANTI-COUNTERFEIT TECHNIQUES

At present, there are so many loopholes in the license application procedure that it is easier to obtain a valid license using a false identity than to counterfeit a license. As soon as these loopholes are tightened, counterfeiting will appear more attractive to impersonators. There are several generally accepted truisms associated with counterfeiting. They are:

- Any technique will suffice against the non-observant inspector or clerk.

- An expert with adequate equipment and time can almost always spot a phony document.*

- In a realistic environment with heavy traffic and time pressure, any document can be counterfeited. It is only a question of the amount of time and money the counterfeiter is willing to invest.

- It is almost always easier to counterfeit a complete card than make partial alterations.

- The "name of the game" is to make the counterfeiter's cost exceed the street value of the document.

A professional artist described his technique for duplicating both a non-photo and photo license. It was impressive how easily it could be done and how small the capital investment was. It is inappropriate to itemize the counterfeiting steps he took, but a cost summary for counterfeiting is presented below:

Non-Photo License: A 5-color separated artwork of complex design takes about 40 hours including photography. Ten thousand copies can be made for $15 and sold at a street price of $5 each.

Photo License: It is considerably more difficult and expensive to counterfeit a license with a mix of photographic data and printed data because the counterfeiter must create personalized printed material early in the process. All subsequent operations on the document must be repeated for each license. Unlike the non-photo license, it takes about 4 hours to make each precise counterfeit photo license; therefore, the street price of such a license is in excess of $100.

*A professional artist was not willing to accept this limitation. Some expertly counterfeited documents may be indistinguishable from officially issued valid documents.

The general requirement for making counterfeiting non-cost-effective is to produce a document that uses hard-to-get materials, requires large capital investment and employs difficult technology. Specifically an issuer should:

- Use hard-to-get paper (or plastic) with imbedded particles, watermarks, designs, etc.

- Keep a careful account of the material.

- Use inks that are difficult to color separate.

- Print designs with fine lines of the order of .001 inches.

- Provide accurate registration of fineline multicolor designs.

- Provide circular targets printed with highly accurate (.003") registered multicolors.

- Put many designs in the image area.

- Use high-resolution film not readily available to the public. Include a resolution chart in the image area.

It is very desirable that a person be able to detect the counterfeit using only his normal senses without the aid of computers or optical or mechanical devices.

There are at least three techniques used on some driver's licenses specifically designed to foil the counterfeiter. They are:

- Intaglio Printing, which is a high precision raised printing made with a high pressure steel press.

- Retro-Reflective beads, which are coated so that specific complex designs appear when observed under a directional light.

- Polarized Strip, which changes appearance when viewed with polarized light.

These techniques definitely increase the cost of counterfeiting; even so, "acceptable" counterfeits of two of the above techniques have been observed.

Attachment 1 describes possible additional anti-counterfeit and personalizing features of the driver's license. Fingerprints have not been recommended in this report because of the cost and complexity of verifying an applicant's fingerprint.

To improve document security it is recommended:

A COLOR PHOTOGRAPH OF THE DRIVER SHOULD BE A MANDATORY FEATURE OF ALL STATE DRIVER'S LICENSES.

EVERY STATE'S DRIVER'S LICENSE SHOULD UNIFORMLY INCLUDE THIS PERSONAL DATA: FULL LEGAL NAME, ADDRESS, DATE OF BIRTH, HEIGHT, WEIGHT, EYE COLOR, LICENSE NUMBER, SEX, SIGNATURE, AND EXPIRATION DATE.

ANTI-COUNTERFEIT FEATURES SHOULD BE EVALUATED WHEN VENDORS SUBMIT PROPOSALS FOR LICENSE FORMS.

SECTION V

COMPUTER USE

DMV COMPUTER DATA STORAGE

A subcommittee of the American National Standards Institute (ANSI) has studied the problem of which data elements should be stored in state DMV computers. Listed below, with any necessary explanation, are the 11 items recommended by ANSI under the heading of driver identification. Where ANSI considered the data element "optional", it is so noted. Forty-five other data elements that cover the areas of license control and status, history of driving violations, punishments and corrective measures are also recommended by ANSI for inclusion.

Identification Parameters

The data elements ANSI recommends be stored are:

1. Full name.
2. Present residence address.
3. Driver License Number. See recommendation in Section IV relative to tamper detecting algorithm.
4. Social Security Number (optional). In some states items 3 and 4 are identical. Because some state laws forbids the use of the SSN as a license number and because it has no error detecting capability, it is recommended that item 3 be distinct from item 4.
5. Sex.
6. Date of Birth.
7. Height (updated at renewals).
8. Weight (updated at renewals).
9. Eye color (optional).

10. Hair color (optional).

11. Race (optional). It is recommended that race not appear on the license.

The DMV computer record should also include at least two personal items which do not appear on the license. These items should be of the type that all applicants would know but which would be difficult for a potential impersonator to obtain. When the license issuance officer verifies the applicant's computer record, he would have this additional data to check with the applicant. It is suggested that the two pieces of personal data be:

- Mother's maiden name, and
- Name of high school or grade school attended.

In order to standardize computer storage at state DMVs, it is recommended:

STATES SHOULD ADOPT THE PARAMETERS RECOMMENDED BY ANSI WITH THE ADDITION OF THE TWO "HIDDEN" PERSONAL ITEMS.

STATUS OF ON-LINE COMMUNICATIONS TERMINALS

The advantages of receiving real-time response in from two seconds to two minutes from a computer are self evident. If a police officer must check the record of a speeding driver, he cannot hold the driver for several days waiting for mail verification from the computer. Similarly, it is more convenient for both the applicant and the DMV to minimize the license issuance delay by reducing computer verification time.

Different states have solved the problem of communication between field issuance stations and the DMV central computer with various degrees of sophistication and cost, such as:

- Ten states* have on-line terminals at all issuance stations.
- Five states are planning terminals at all issuance stations in the next two years.

*Florida, Maine, Maryland, Massachusetts, Michigan, Ohio, Oklahoma, Tennessee, Virginia, Washington, D.C.

- Twenty-two states have some on-line terminals.
- Nineteen states do not have any on-line terminals.
- Seventeen states have intentions of acquiring on-line terminals.

Without on-line terminals, the inspector does have the option of telephoning the computer center for a rapid check of a license application, but this option is rarely exercised. The actual monthly costs of rental for the terminal and dedicated telephone lines for two states are given in Table II. The cost difference on a per-terminal basis is due largely to the fact that Ohio's terminals are equipped with cathode ray tube (CRT) displays, which are easier to use but are more expensive.

TABLE II
Costs of On-Line Terminals in Ohio and Florida

	Ohio Terminal with CRT	Florida Terminal No CRT
No. of offices	212	96
No. of terminals	214	150
Total terminal rental cost/mo.	$77,680	$23,100
line costs/month	$25,000	$ 8,500
rental cost/terminal/mo.	$360	$154
total cost/terminal/mo.	$500	$210

Although on-line terminals are valuable for rapid computer verification, each state has specialized needs for intrastate data communication; therefore, no Federal standard can be established.

SECTION VI

INFORMATION EXCHANGE

DRIVER'S LICENSE CONTROL AND NATIONAL DRIVER REGISTER

Driver's License Control

Both interstate cooperation and Federal guidelines have established legal controls in the issuance process to verify that the license is actually issued in the true name of the applicant. The National Highway Traffic Safety Administration (NHTSA) Highway Safety Program Standard No. 5, Driver Licensing,[6] requests the states to seek positive proof of full name, date and place of birth prior to issuance of the initial driver's license. Currently 47 states[6] claim to comply with this provision, but inadequate computer storage capacity sometimes restricts the retention of place of birth.

Another interstate control of licensed drivers available to the states is in the form of the Driver License Compact (DLC) authorized by Congress in 1958. Twenty-nine states presently are members of the Compact,[6] which requires member states to forward records of out-of-state traffic violation convictions to the driver records agency in the home state of the driver. Upon issuance of a driver's license in any state, the Compact requires that all previous current valid licenses be surrendered to the new state of issuance and returned by the driver licensing officials to the previous state of issuance. Section 6-101(c) of the Uniform Vehicle Code (UVC) also provides that out-of-state drivers surrender their old licenses. Eight additional states claim compliance with this section of the UVC. It is likely, however, that some states do not comply totally with the DLC and UVC provisions.

Many states have formed local regional agreements with respect to driver violations. In some cases, if a driver receives a speeding ticket while driving out-of-state, this violation is forwarded to his home state and entered in his computer record. Other agreements restrict these actions to more serious violations such as drunken or reckless driving. All of these control features are desirable and should be retained.

In Section III, we pointed out that applications for interstate transfer of driving privilege are particularly vulnerable to false ID fraud. A person presenting a stolen or counterfeit out-of-state license as identification can obtain a new and valid license through such a transfer application. To detect such a fraudulent transaction, it is necessary to check the license files of the state which purportedly issued the old license. At present, such fraud is detected some time after the fact (if at all), when the transferred license is returned by mail to the state of origin. To check all transfer applications for validity by interstate mailing before issuing new licenses would require a substantial increase in effort by the licensing agencies, would increase significantly their cost of operation, and would introduce new and undesirable delays in the licensing process. In order to increase the security of the license transfer process without introducing these problems, we propose a system through which computerized inquiries could be made by a license examiner in one state to the driver's license files in any other state. This would permit validation of transfer applications in a matter of seconds. A great deal of the hardware required to implement this proposal is already in operation. The license files are computerized in all states; as discussed in the last section, most states either have or are planning to obtain the on-line terminals which are also required for "instant" verification of license transfer applications. The remaining major element that would be required is a nationwide data communication system linking state DMV offices. The cost of such a system would be decreased greatly if it were made an "add-on" to an existing data system. The following subsections describe three operational nationwide data systems that could conceivably be adapted to this purpose: the National Driver Register, the National Crime Information Center, and the National Law Enforcement Telecommunications System.

National Driver Register (NDR)

The United States Congress established the National Driver Register (NDR) to assist each state in locating the records of drivers who had violated certain laws and had their licenses taken away, regardless of where in the U.S. the violations occurred. The NDR provides a central driver records data base containing the names of drivers whose licenses have been denied, suspended, or revoked for any reason (except denial or withdrawal for less than six months due to a series of non-moving violations).

Although NDR is a voluntary service, full participation by every state is essential if it is to serve all the states effectively. Full participation includes the checking of all driver's license applications through the Register and the prompt transmittal to the Register of information concerning the denial or withdrawal of licenses by the states. This checking service enables state and Federal officials to avoid the issuance of a license or permit to an individual whose license has been denied or withdrawn by another jurisdiction.

If a driver has his license revoked in State A, this revocation is recorded with NDR. If the driver applies in State B for a license, State B requests a copy of his driving record from NDR. Upon learning of the revocation, State B is free to take whatever action it deems appropriate. The NDR is an information exchange and clearing house and does not dictate enforcement procedures to the states.

The NDR has listed about 5 million names of drivers whose licenses have been revoked. Each day it receives the names of about 5,500 people who lose their license, (often for lack of insurance payment). The NDR answers about 85,000 inquiries per day.

The activities of the NDR have been investigated by the Congressional Subcommittee[8] on Constitutional Rights. It has been concluded that the NDR provides a valuable function in terms of traffic safety and does not conflict with any privacy laws.

The Safety Management Institute performed a study in December 1973 to determine how the NDR could be made more effective. They made several recommendations of major significance. They recommended that the NDR:

- Provide on-line terminals so state inputs and queries could be satisfied in minutes rather than days.
- Change the nature of the record storage to conform to a pointer/index record of revocations. The record would then provide the location of the revoked driver record rather than the record itself.

It is important to note that the NDR will detect only those drivers whose licenses have been revoked and who apply fraudulently for new licenses in their true names. An imposter using a stolen or counterfeit license to apply for a new license would not be detected by an NDR check. Only a check of the complete license files of the state which purportedly issued the license would detect such a fraud. It is not economically feasible to expand the NDR, which is designed to provide information on the "exceptional" driver only, to include the much larger number of valid license holders.

NATIONAL CRIME INFORMATION CENTER (NCIC)

The NCIC is a computerized information system established in 1967 as a service to all law enforcement agencies--local, state and Federal. The system operates by means of computers, data transmission over communication lines, and telecommunication devices. Its objective is to improve the effectiveness of law enforcement through the more efficient handling and exchange of documented police information.

The NCIC computer connects to 86 law enforcement terminals located in all 50 States, Washington, D.C., Puerto Rico, and Canada. Inquiries about criminals and stolen property can be made from any control terminal throughout the country with a response received in a few seconds. The NCIC is also connected to the NLETS system (discussed below) via a high data rate line; NCIC lines to Puerto Rico, Alaska and Hawaii help connect these out-of-continental locations into the NLETS system.

The NCIC computer has stored 5.6 million items of information[9] in eight categories:

- Stolen securities - 1.7 million
- Stolen motor vehicles - .82 million
- Missing persons - .64 million
- Wanted persons - .16 million

- Stolen boats - 12,000
- Stolen license plates - .28 million
- Computerized Criminal Histories (CCH) - .79 million

Inquiries for information in one of these categories is meant to assist in the apprehension of criminals who commit crimes in more than one state. Seventy percent of rearrests are within the same state; therefore, the NCIC does not replace the need for a state criminal file.

As with the NDR, NCIC files apply to the "exceptional" individual and would not detect impersonation of a valid license holder.

NATIONAL LAW ENFORCEMENT TELECOMMUNICATION SYSTEM

System Description

The National Law Enforcement Telecommunication System (NLETS) is a computerized, high-speed message switching system created for and dedicated to the criminal justice community. Its sole purpose is to provide for the interstate and/or interagency exchange of criminal-justice- and criminal-justice-related information. The NLETS does not maintain computer files in the NLETS message switcher; a magnetic tape log of all transactions is kept to provide system statistical reports and management information. No message text information is retained in the magnetic tape log.

A computer system located at the Arizona Department of Public Safety in Phoenix, Arizona, supports the NLETS. The system has the capability to receive, store, and forward message traffic from and to all its user agencies. Message traffic includes administrative data from one point to one or more points. In addition, it supports inquiry into state motor vehicle and driver's license data bases.

The heart of the NLETS system is a pair of Communication Systems Computers located at Phoenix. High-data-rate telephone lines are used to provide direct computer connection to individual state computer networks. The state computers in turn are connected to state, county, and city networks. Users who are not yet ready to connect to their state computers are serviced by individual low-data-rate lines to a (Model 37ASR) teletype terminal. Irrespective of the line type, NLETS terminates their lines with a single Point of Entry (POE) to each state-

level user. The distribution of messages from the POE to individual end users is a state responsibility. A high-speed line also connects the National Crime Information Center (NCIC) to NLETS, and the U.S. Customs Treasury Enforcement Communications System (TECS).

Although NLETS is a national system, it is directly controlled by the 50 member states. Each state appoints an active member to represent it in the NLETS organization. Several states that have a regional community of interest are grouped together to form an NLETS Region. There are eight NLETS Regions. The state representatives in each Region elect a Chairman each year, and he represents the Region on the NLETS, Inc. Board of Directors.

The NLETS Network, with fully redundant hardware and software is operational 24 hours per day, 7 days a week to provide near-instantaneous response to inquiries originated at any point in the Unites States. The network was designed to handle up to 26,000 messages per hour distributed over 50 high-speed lines. Some large-scale users, such as California, Pennsylvania, Florida, Illinois and Texas, are currently sending and receiving over 50,000 to 70,000 messages per month. A total of 1.5 million messages were exchanged in January 1976 with 110,000 messages involving driver's licenses.

Applicability of NLETS to Driver's License Security

NLETS is a high-performance communication service that enables law enforcement agencies anywhere in the United States to exchange vital information within seconds. Because it already provides direct computer access to state DMV files, NLETS appears to be the most logical system to adapt for interstate validation of license applications.

As of May 1976, 37 states and 27 Federal agencies could obtain fully automated responses to driver's license inquiries, which means any on-line terminal connected to the NLETS system can access the individual driving record of an out-of-state licensee. Sixty percent of all driver records are available on this computer-to-computer basis. The driver's record and his physical description can be printed without any intermediate human intervention.

Fourteen states and one Federal agency are connected to NLETS via teletype. With these less sophisticated terminals, a human must intervene before the message is put on the NLETS system. This intervention may take the form of typing a few character approval codes or inserting a "torn tape" teletype message into the DMV computer. Although these are simple operations, because of personnel shortage and equipment tie up, they often have a major impact on message time. In an experiment two law enforcement administrators from two different states requested out-of-state driver records from six to seven other states. In automated states, the responses arrived within one minute. In two non-automated states, the responses took between 45 minutes and one hour. NLETS personnel believe non-automated responses often take even longer.

In states without any terminals, NLETS can still be accessed. The registrar can telephone the state location where the NLETS line terminates, make a verbal request, and subsequently receive a telephoned verbal reply. This procedure is awkward and is therefore almost never done.

In order to make rapid, nationwide interstate driver ID checking by local issuance offices a practical reality, the non-automated states with on-line terminals must make software modifications to permit fully automated responses and states without on-line terminals must obtain them. The capacity of the NLETS system must be analyzed to assess the impact on system performance that would result from adding routine license verification requests to the present message load. The system's primary purpose will remain the handling of high-priority law enforcement inquiries; significant delays in this service must be avoided. This could be done by instituting priority classes for NLETS traffic and by adding any necessary capacity to the network.

A STUDY SHOULD BE MADE OF THE PRACTICALITY OF INCLUDING ALL STATE LICENSING OFFICES INTO THE NLETS ON A REAL-TIME BASIS. SUCH AN ARRANGEMENT WOULD PERMIT ALMOST INSTANTANEOUS (COMPUTER-TO-COMPUTER) INTERSTATE EXCHANGE OF MOTOR VEHICLE AND DRIVER INFORMATION, AND IF PUBLICIZED COULD ACT AS AN ADDITIONAL DETERRENT.

ATTACHMENT 1

THE DRIVER'S LICENSES OF THE STATES AS PERSONAL IDENTIFICATION DOCUMENTS: SUGGESTED DOCUMENT SECURITY ELEMENTS

PREPARED FOR:

Mr. William Duggan, Chairman
Task Force IV
Federal Identification Documents of the
Federal Advisory Committee on False Identification (FACFI)

PREPARED BY:

Department of the Treasury
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Washington, D.C. 20228

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INTRODUCTION

The de facto usage of a driver's license as a means of personal identification in day-to-day marketplace transactions by the general public is well known and, in a practical sense, transcends in frequency its usage as an identifier to the issuing and police authorities of the states.

Recognizing the general use of the driver's licenses of the states as primary identifiers, the Federal Advisory Committee on False Identification (FACFI) has recommended that Federal support be given the various states to lessen fraudulent usage of bona fide documents, deter counterfeiting, prevent alteration of the genuine issues, and diminish second party usage.

In recommending support for the establishment of standards to deter the fraudulent usage of driver's licenses, FACFI has recognized that not only are the intrinsic features of the license document of paramount importance, but that the systems interface relating to issuance, reissuance, and identity data authentication play a very important role. Concomitant to these factors, and conceivably in certain instances of greater importance to the individual states, are the procedures developed and in current use which best meet their requirements, not the least of which are those which relate to public acceptance and total systems cost.

In order to assist Mr. William Duggan, Chairman of FACFI Task Force IV, Federal Identification Documents, this Bureau has been requested to suggest general requirements for state driver's licenses which will address standardization of document security features to aid in greater deterrency of fraudulent usage. In this regard we recognize that such recommendations could entail a very high order of document-automated systems interfaces which may be approached in future, but which may be rejected by various states for a variety of reasons, including excessive cost, as well as procedural and public acceptance constraints. Therefore, in further recognition of the myriad of document production methods which could be proposed by various producing commercial organizations, an attempt shall be made to list those requirements of document security which may afford various orders of security dependent upon the desires of individual states, but which can also be interpreted as a genesis for the time effective development of minimal standards of acceptance to aid in thwarting a very real loss of million of dollars due to false identification.

GENERAL RECOMMENDATIONS FOR DRIVER'S LICENSE DOCUMENT SECURITY

The driver's license documents issued by the 50 states should provide protection against the following:

1. Fraudulent duplication-counterfeiting;

2. Alteration-forgery and changes in elements other than signatures and vital personal statistics of the bona fide holder, e.g., substitution of a photograph; and,

3. Second-party usage by consent of the bona fide holder, loss, or theft.

The procedural issuance, reissuance, and authentication procedures have been discussed. Important as these considerations are to a total system, the recommendations which follow pertain primarily to intrinsic features of the document.

A number of devices to enhance the intrinsic security of the document can be envisioned. Certain of these could interface with various automated systems ranging from a simple ultraviolet light to detect fluorescence to a "blackbox" detector to authenticate at authoritative levels. However, it is realized that one of the primary areas of consideration is the use of the driver's license for low level identification related to the visual aspects of the document. For example, for use in point-of-sale identification of the bearer paying for a purchase with or cashing a check, or by the highway patrolman in identifying the driver of a motor vehicle.

At these levels of detection, the document format must be one that is recognizable and still affords a high order of security against counterfeiting, forgery, and alteration. Attendant sophisticated features of the document will assist authoritative investigation of fraud, but in general, if interfaced with sophisticated detection-automation systems, will not provide first instance assurance of authenticity.

The inclusion of a simple specialized visual detection aid can attract the attention of the public to such an aid only. If the public does not look at all features on a document, but concentrates its attention on a particular device in the document, then this can serve as an inducement to counterfeiters to make a reasonable simulation of such a device. Therefore, the selection of such document deterrent devices must be made with care.

Construction of the Document

Dimensions. The document should be of a size which readily fits most wallets and billfolds, e.g., the size of certain credit cards.

Substrate. The substrate sheet material can be paper, card stock, or plastic of types not readily available in the marketplace. Examples are specially water-marked paper stocks, or substrates having visibly included colored fibers, planchettes, or other devices.

Front and Back Outer Surfaces. The substrate should be laminated with a durable plastic material. Consideration should be given to the imposition of an embossed design imparted to the plastic surfaces in the laminating process. This may aid in thwarting low-level photo reproduction by conventional means or with color copiers. It may also be desirable to emboss the holder's license number. This would permit merchants having credit card imprinters to imprint the license number on the back or face of a check being presented to him. The laminating system should be designed to prevent or make exceedingly difficult alterations to the license.

Design Format

The face and back of the substrate should bear well-executed multicolor printed designs which provide an order of protection against photo reproduction to force even the more sophisticated counterfeiters to use arduous hand-work techniques in attempting simulation of the documents. The unique characteristics of intaglio renderings from line-engraved plates can afford a high order of protection. Fine line multicolor offset or letter press visible and fluorescent printings can serve as an adjunct to intaglio or, if properly designed, can afford a lesser order of protection. If compatible with the laminating system and nature of the substrate, visible background tint printings executed with inks sensitive to chemical and solvent eradication techniques could be included to aid in thwarting alterations to signatures and other data.

Personal Vital Statistics

The name, address, and personal data relating to the bona fide bearer should be clearly imprinted, ideally with an indelible ribbon ink.

Personalization Devices

The obvious, readily discernible devices are the photograph, fingerprint, and signature of the bona fide holder. (Computerized tape memories related to the license number or vital statistics of the holder are valuable for investigative purposes. However, unless keyed for instant data retrieval by the merchant, these do not provide an expeditious aid to authentication. It is conceivable to provide restricted key listings of numerical relationships to the marketplace and police authorities for low-level investigative purposes, but one would suspect that this could be generally ignored by the busy merchant or highway patrolman.)

The photograph of the bearer should be current and a true likeness, preferably in color. It should be bound to the substrate in such a fashion to preclude the danger of removal and substitution. Another approach to impair photo substitution is to make the bearer's photo an integral part of the substrate. Envisioned approaches are: a photo-sensitive emulsion coating over the entire face surface of the printed document upon which a transparent type photo of the bearer completely covers the document face area; or, coating only that portion of the face surface of the printed document with a photo-sensitive emulsion coating upon which the photo of the bearer is to be confined. For a lower level of document security, a photo-presensitized unprinted substrate could be used to photographically reproduce design and other required elements as well as the photo of the bearer from photo negatives.

A fingerprint of the holder serves as an identifying feature. For low-level detection, it is subordinate in effectiveness to a photo. However, if possible, it should be included on the document to further attest to the identity of the bona fide license holder.

The signature of the bona fide holder should be on the document, preferably over a portion of the holder's photo.

CONCLUSION

The forgoing recommendations for the document security features which are suggested for inclusion in the driver's licenses of the 50 states are, in the main, addressed to assisting in the ready identification of the license holder at the primary level of detection by merchants, police, and others. These suggestions generally relate to what could be termed minimal

document security features. They have been put forth in addressing the nationwide necessity of reducing false identification transactions by those not having specialized detection devices, but only the use of the unaided human eye.

If requested, designated personnel of this Bureau will consult with the authorities of Federal and state agencies concerned with document deterrents to fraud.

END