



A POSSIBLE DESIGN AND
ESTIMATED COST ANALYSIS OF A COMPUTER
BASED INFORMATION SYSTEM FOR GUN CONTROL

CISR #S2

D. CARR, P. CHEN, J. DONOVAN,
J. MELDMAN, R. PANKIEWICZ, M. ZISMAN

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EXECUTIVE SUMMARY

This report is an outgrowth of a project conducted by students enrolled in a management information systems course at the Sloan School of Management at M.I.T. The report is a technical analysis of a computer system to meet the needs of the proposed ATF regulations. It is important to note that only costs for developing and operating a computer system are analyzed; benefits to be derived from such a system are not addressed and neither are non-computer related costs such as enforcement costs. The main objective in preparing this report was to develop a case study for technology based courses in information systems.

Two important parameters in such systems are database size and annual transaction volume. Calculations in this report indicate the data base size to be 25 billion characters of online data and the annual transaction volume to be 1.3 billion database accesses, most of which are for report generation.

Results of this report indicate that six years will be needed to design, implement, and debug a computer based information system to meet the needs of the proposed rules, and to initialize the database.

If purchased, the estimated hardware costs are approximately \$4.1 million. Estimated software design and development costs are \$6.5 million. Annual costs to operate this system are estimated to be \$17 million. A large portion of the operating cost will be allocated to data entry. Estimated start up costs over the six year development period are \$78 million, most of which are associated with costs for data initialization.

The above computer related costs do not include costs for back up facilities, or handling of data on NFA firearms, ammunition, firearm parts, and firearms imported by military personnel.

Also included in the report are cost data for other information systems of comparable size. The estimated costs for the proposed system appear to be comparable to the costs incurred in previously implemented systems.

For many parameters we have obtained several estimates from individuals and agencies referenced in the acknowledgements; the interested reader may wish to use other parameters in these calculations. We suggest that this report can be used as the basis for a comprehensive study of a computer system to augment firearms regulation; it cannot be used as a substitute.

ACKNOWLEDGEMENTS

The following individuals and organizations were contacted for information: Leonard Phillips of American Key Punch and Systems; Robin Tate and Glenn Whittington of American Airlines; Kathy Hirsch of American Management Systems; Bob Goldberg of BGS Systems; Mr. Barinow, Mrs. Erickson, Richard Johnson, Jim Hunt, Bill Kearns, Don Keith, Don Lofton, Bill McKay, Ms. Minks, Atley Peterson, Lester Stanford, and Nick Vonovich of the Bureau of Bureau of Alcohol, Tobacco, and Firearms; Louis Sigallia of the Bureau of Customs; Ms. Chris Bullen and Dr. John Rockart of the Center for Information Systems Research, Sloan School, MIT; Wayne Hilton and Jack Zodrow of Eastern Airlines; Bill Courtney and Tom Walzykowski of the FBI; Tom Hammett, Ken Schmitz, Don Walker and Palmer Williams of Hertz Rent-a-Car; Louis Gutentag of Harvard; John Hamerski, Dick MacKinnon, Tony Torti and Jack Weiss of IBM; John Mannion of the IRS; Steve Gold of Massachusetts Blue Cross; Professor Stuart Madnick of MIT; Students in the MIT Sloan School Class 15.565; James Featherstone, Neal Knox, Michael Lee and Tanya Metaksa of the National Rifle Association; Oscar Fernandez and Mike Mandelbom of Pan American Airlines; John Kahill of Sheraton International Hotels; Bruce Peterson and Mr. Moniago of Technology Management, Inc.; Roy Hoffman of United Airlines; John Jones and Mrs. Talley of the U.S. Army.

We would particularly like to thank several colleagues at MIT, including Dr. John Rockart, whose insights were most helpful. We also make special note of the most helpful and pleasant conversations with members of the Bureau of Alcohol, Tobacco, and Firearms.

A POSSIBLE DESIGN AND ESTIMATED COST ANALYSIS OF A COMPUTER BASED
INFORMATION SYSTEM FOR GUN TRACKING AND REPORTING

This report analyzes the computational needs and estimated costs of a computer based information system to meet the storage and data manipulation capacity needed for a firearms tracing and reporting system as proposed in Federal Register Vol. 43, No. 55 - Tuesday, March 21, 1978. [See Appendix A].

The faculty working on this report have done so with the primary purpose of developing a case study to serve as an educational vehicle in Management Information System design courses. As such, the report will be used in course 15.565 at MIT and distributed to other universities. The students working on this report have done so to fulfill credit and course requirements for analyzing a computer based information system.

We have chosen this particular application because of its timeliness, its size (as it typifies many of the future information systems), and because of the opportunity it affords us in following its progress (and the decision-making process) from inception to implementation and through operations.

In the course of preparing this report we have sought information from various organizations including the FBI; U.S. Customs; Bureau of Alcohol, Tobacco and Firearms; congressional offices; National Rifle Association; IBM Corporation; U.S. Army; computer vendors; computer timesharing companies; and others. These organizations have been most helpful and some also have expressed interest in the results of this report. As such, this report will be sent to personnel from those organizations who have requested it. We send the report to these organizations as purely

informational and not in support or opposition to their policies or proposals.

Several points must be noted concerning this report.

1. This report is a technical analysis of the required computer system, performed with limited resources in a short time - it is not an extensive study. We would welcome this report to be used as a starting point for such an extensive study but not as a substitute.

2. The report does not define objectives for the proposed system, does not evaluate the effectiveness of such a proposed system, and does not develop a cost benefit analysis; hence, does not recommend or oppose the proposed system.

3. Gun related information systems fall into two broad categories:

- a.) person registration and licensing - used to determine if a person can buy a gun and to keep track of that person.
- b.) gun registration and tracking - used to trace guns sold and distributed in the U.S.

The regulations in Appendix A propose a system of gun registration and tracking. There does exist an analysis of costs associated with a person registration and licensing system [e.g., "A Preliminary Costs Analysis of Firearms Control Program," Research Association Incorporated, Silver Springs, Maryland, December 20, 1968; Report to the Congress, "Hand Gun Control: Effectiveness and Costs," PAD-78-4, Comptroller General of the United States, February 6, 1978].

4. Only computer needs (data, software, hardware, personnel for maintaining data, personnel for operation of the computer, personnel for maintaining software and responding to queries) are reported on. Other needs and costs are not addressed. The procedures and costs not addressed include:

- costs of educating licensees in regulation requirements
- procedures and costs of submitting reports
- manufacturing procedures and costs of adding serial number identification to firearms
- procedures and costs for enforcement
- form printing costs
- administration costs

As a case study for a technology-based management information system course, the procedures and costs associated with reporting, manufacturing, enforcement, investigation, printing, and administration are beyond the scope of this report. However, for comprehensive evaluation of such a system, costs associated with these other areas should be investigated and added to those mentioned in this report. These additional problems and costs may be substantial.

5. This is a technical report and as such no views are implied nor should be attributed to MIT, Sloan School, Harvard University, Tufts University, or any of the institutions with which the students and faculty working on this report are affiliated.

2. Description of System Proposed

The Bureau of Alcohol, Tobacco, and Firearms (ATF) has proposed a new set of regulations to facilitate monitoring the movement of firearms. Briefly, these regulations would require that: (1) all new firearms bear a unique identification number, (2) each licensee report the theft, loss or recovery of a firearm, (3) each manufacturer or importer submit to ATF a quarterly report of firearms manufactured or imported, and (4) each licensee submit to ATF a quarterly report of all firearm dispositions.*

In conversations with ATF personnel it was stated that the implementation of these regulations would improve ATF's ability to gather information on the commerce of firearms. The reports submitted by all licensees would yield comprehensive data on the flow of firearms throughout the nation. It is the intent of ATF that analysis of these data could identify categories of sources of firearms used in crimes, pinpoint unusual traffic of firearms that might warrant investigation, and provide other statistical information.

It is the major intent of ATF that these data could be used in tracing for local law enforcement agencies, a gun reported used in a crime. Currently, all tracing is done manually, through a series of telephone calls. The manufacturer or importer, and then the distributors or wholesalers, and finally the dealer are each asked to retrieve information from their records about where a gun was shipped. The trace is complete when ATF can provide the requesting law enforcement agency with the name and address of the retail seller (or buyer) of the gun.**

* Federal Register; March 21, 1978, Part III, pp 11800-11810

** ATF Fact Sheet #FY-78-24, April 1, 1978.

In 1977, the ATF's center received 62,498 trace requests and successfully completed 34,597. For firearms purchased after 1968, the percent of successful traces is close to 90 percent. The present system is manual and ATF reports the tracing center is staffed by 23 people.* ATF personnel stated that data gathered from the licensees' reports and stored by ATF would expedite the tracing process.

No data on the individual gun owner would be stored in the proposed system.** Hence, the last step of the present method would remain the same, i.e., once the dealer is identified by the system then that dealer would be personally contacted for his records on the buyer of the gun. Also, under the proposed regulations, data on sales or exchanges of guns between non-licensed dealers, e.g., private citizens would not be kept. It is suspected that many of the guns used in crimes may have gone through several such changes in private ownership. Hence, several manual steps may be involved in completing a gun trace.

ATF personnel also expect that such a system would permit comparative analysis of data collected over several years to identify trends in the flow of firearms and their correlation with other factors, and thereby enable the Bureau to focus their resources on problem areas.

* ATF News Release #FY-78-26, April 1, 1978

** There seems to be a small contradiction in the regulations on this point: Section 178.131 states that data on final sales to non-licensees would not be reported, whereas Section 178.113 states that data on non-licensees acquiring imported guns will be reported. Also, existing regulations require a dealer that goes out of business to submit all his records (on sales of firearms to citizens) to ATF. For the purposes of this technical report we ignore this data series, as it would be small compared to other data series. However, there may be problems arising from privacy and security issues associated with such data.

3. Computer Requirements

In this section we analyze the data quantities, and query and reporting capabilities which determine storage and computer requirements.

Three basic data series would form the heart of the proposed system: data on guns; data on thefts; data on licensees, including manufacturers and distributors.

To compute the storage needs of such a system we suggest a design for the file organization. Our file organization was determined by the amount of data in each category and the way in which data is accessed. In general there is a trade-off between storage requirements and speed of access. For example, in organizing a file system, data may be duplicated or extra pointer* information may be added to permit faster access of data, but at a cost of increased storage requirements.

In the proposed system the storage requirements are such that most commercial data base management systems which utilize full inversion** or extensive indexing would require large storage capacities making them impractical. Since the data base is large and the structure of the data is fairly straightforward, it would seem appropriate that a specialized data base management system would be developed or built upon a simpler file access system such as a CODASYL type system.

In computing the storage requirements we have taken a simple design for a file structure with minimum linking and overhead items to obtain a hopeful lower bound on storage size.

To analyze the power of the computer needed we determine the load or the number of transactions per year that the system must process.

* A pointer is (logically) a connection between two data records (A and B) to facilitate fast access of record B after retrieving record A.

** See Date, C.J. "An Introduction to Database Systems. Addison-Wesley, 1975.

A transaction is defined as an access to a data record. Hence, any user initiated action normally generates several transactions. For the proposed system there are three categories of user initiated actions: queries, (e.g., trace request), data entry (e.g., update, validation), and reports (e.g., statistical report on categories of stolen guns used in crimes).

All numbers used in this report are based on current statistics but are projected out over six years.

We have chosen six years as the amount of time that will elapse before the system becomes operational for two reasons:

1. Most guns used in crimes are less than five years old.* For a system to be effective in tracing a gun used in a crime, six years of gun data should be available. Hence, before the present manual system is replaced by the new system, data would have to be accumulated and loaded into the system for six years.

2. The design phase for such a system may be two years, the software development phase may be three years, and the check out phase may be at least one year. Hence six years may elapse before the information system is running.

* ATF Newsletter, #FY-77-30, February 24, 1977.

3.1 Storage Requirements

To estimate the storage requirements, we itemize the data series that would be kept in the system and calculate the size of each series.

3.1.1 Data on New Guns

We present two estimates on the amount of storage required for the data collected from reports submitted by manufacturers and licensees on the transfer of guns. The first is based on a straightforward model where no sophisticated encoding schemes^{***} or searching schemes are used. This minimizes computer time used to retrieve the data but requires more storage space and results in more I/O accesses. The second estimate is based on a model that uses sophisticated encoding methods and assumes the use of a hash-coding for accessing ^{***}. This approach reduces storage requirements and I/O accesses but requires more computer time for encoding and decoding data.

a. The straightforward model we use is:

$$\begin{aligned}
 \longrightarrow \text{storage for gun data} &= (\text{number of guns sold in base year}) \times (\text{data per entry} + \\
 &\text{linking information}) \times (\text{dispositions}) \times (\text{number of years information} \\
 &\text{kept}) \times (\text{compounded increase in sales}) \\
 &= (6,240,000) \times (109 + 48) \times (4) \times (6) \times (1.13) \\
 &= 26,569,000,000 \text{ bytes } **
 \end{aligned}$$

- number of guns = 6,240,000 with 5,345,000 firearms manufactured in the U.S. in 1976 and 895,000 firearms imported into the U.S. in 1976*.

- data per entry = 109 bytes or characters. The proposed rules require the manufacturer to report the unique 14 digit identifying number on each device (which encodes the reporter's own ID number, and the model and caliber of the gun), and the date of manufacture or importation; the date of disposition and the receiver of each firearm; the mode of transportation and the name of the carrier (Federal Register, Appendix A). Officials at ATF estimated that 109 bytes would be used to store this information.

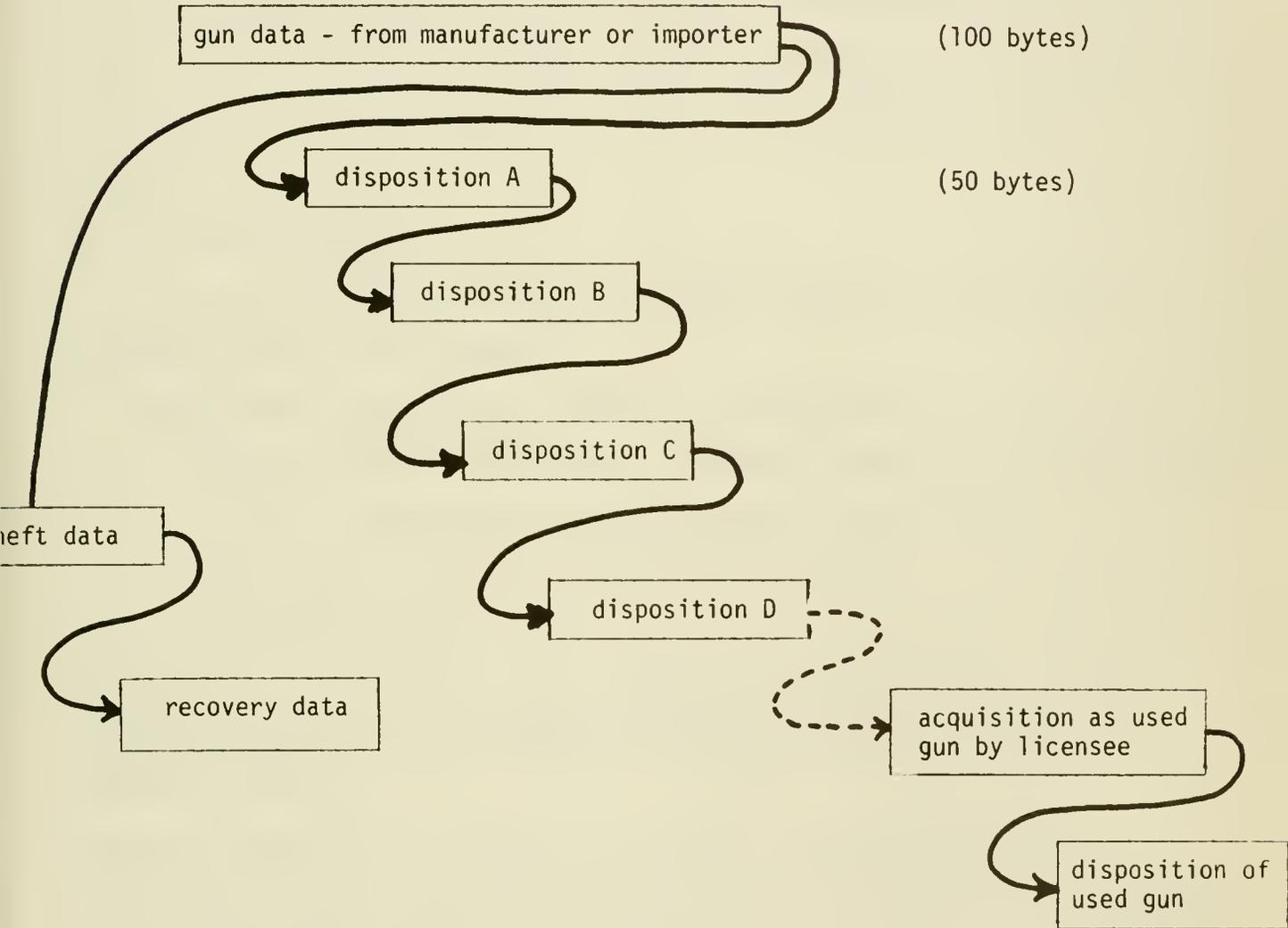
* "Alcohol, Tobacco, and Firearms, Summary Statistics," Dept. of the Treasury, Bureau of ATF (ATF publication 1323.1): April 1977.

** a byte corresponds to one character of information

*** "The Art of Computer Programming", Knuth, Donald; Addison and Wesley, 1974.

- linking information = 48 bytes. This would include pointers to other records and other system information. Assuming a minimum of pointers that would allow for fast access during a trace we propose that all records of the same guns through each disposition (from manufacturer to wholesaler to dealer) would be linked with forward and backward pointers. Therefore if a serial number is used as a key, then a trace would only require one search for manufacturer record followed by accesses, using pointers to each disposition record, until the last disposition was found. Assuming pointers take 4 bytes this would account for 8 bytes. Similarly, assuming gun records were linked five other ways, e.g., by manufacturer, by dealer, by location, by type of gun, by carrier, yields a total of six sets of pointers.
- dispositions - 4 times. The new regulations would require that every licensee report to ATF on the disposition of any firearm (Federal Register, loc. cit), e.g., manufacturer to wholesaler to distributors. Estimates by the FBI, ATF and others are that each firearm is transferred an average of four times before it is acquired by a nonlicensee (citizen). Thus, the 6,240,000 firearms distributed per year would each accumulate an average of four entries of information identifying successive dates of disposition, destinations, modes of transportation, and carriers. (This amounts to a total of 25 million dispositions that must be reported and recorded each year.)
- number of years information kept = 6. Studies have shown that most firearms used in a crime are not more than five years old. (ATF newsletter #FY-77-30, February 24, 1977). Thus to insure a high percentage of successful tracings, all data mentioned above from the latest five to seven years would have to be kept readily accessible at any time. Of course, older data would probably be retained indefinitely on some secondary storage medium, to facilitate comparative analysis of years.
- Compounded increase in sales = 1.13. Assuming an annual increase in gun sales of 2%, and compounding over six years yields 113%.
 - b. the model using sophisticated encoding schema, structuring and hashing is:
storage for gun data = [(number of guns sold in base year) x (data per gun + linking) x (number of years information kept) +(number of guns sold in base year) x (data per disposition) x (dispositions) x (number of years information kept)] x (hash factor) x (compounded increase in sales)
= [(6,240,000) x (52 + 48) x (6) + (6,240,000) x (50) x (4) x (6)] x (1.2) x (1.13)
= 15,231,000,000 bytes

- number of guns = 6,240,000 as above.
- data per gun = 100 bytes. Encoding of the gun data could reduce the number of bytes stored per gun from 109 to 52. Linking information would require 48 bytes, as above. Total = 100 bytes per firearm. This model assumes a structure as follows:



Information on each gun is stored only once and not with every disposition record. Hence the records for each disposition would be substantially smaller.

- number of years information kept = 6, as above.
- data per disposition = 50. Encoding of the gun disposition data could reduce the total number of bytes to 50.
- dispositions = 4, as above.
- hash factor = 1.2. Assume the use of an efficient hashing algorithm that requires only 1.2 times the amount storage used for data.
- compounded increase in sales = 113%, as above.

It appears that while the volume of data stored in the proposed system would be large, none of this data would be highly volatile and the average number of accesses to any one record would be small. To minimize the storage requirements, at a slight increase in computer-time requirements, the second model (using data-encoding and hash-coding for accessing) is thus more appropriate. Hence, we will work with the second (lower) estimate in this report.

3.1.2 Data on Used Guns

Licensees would also be required to submit reports on the acquisition and disposition of used firearms.

$$\begin{aligned} \rightarrow \text{storage for used gun data} &= (\text{number of used guns sold per year}) \times (\text{data} \\ &\quad \text{per acquisition or disposition}) \times (\text{number of acquisitions or dispositions}) \\ &\quad \times (\text{years}) \times (\text{compounded increase in sales}) \times (\text{hash factor}) \\ &= (10,000,000) \times (50) \times (2) \times (6) \times (1.13) \times (1.2) \\ &= 8,136,000,000 \text{ bytes} \end{aligned}$$

-number of used guns sold per year = 10,000,000. We assume that 10% of the estimated 200,000,000 guns currently held in the country are resold each year. We further assume that one half of these used guns are traded through commercial channels.

-data per acquisition or disposition = 50 bytes. Records on guns that bear a 14-digit identification number could be added to an existing chain of dispositions. Each such record would contain 50 bytes, assuming sophisticated encoding mechanism, as discussed in Section 3.1.1. Guns that were manufactured before the proposed regulations were implemented would not bear a 14-digit identification number. Thus, new manufacturer's-gun-date records would have to be created for these older used guns when they enter commercial channels. The gun data records would be similar to those described in Section 3.1.1, but the absence of an identification number on the gun may imply that the records' contents and structure may be different. Records on used guns that did not have a 100 byte manufacture record previously stored in the system (e.g., guns made prior to these regulations) may require additional storage requirements which are in excess of 50-byte disposition records.

-number of acquisitions or dispositions = 2. We assume there would be 1 acquisition plus 1 disposition per firearm to be reported.

-years = 6, as discussed in Section 3.1.1.

-compounded increase in sales, at 2% per year over a six year period is 113%

-hash-factor = 1.2, as stated in Section 3.1.1.

Note that these storage requirement calculations depend on the data record size. Irrespective of how efficiently the data can be compressed, these are approximately 347,000,000 records that must be stored for the data series presented in Sections 3.1.1 and 3.1.2.

3.1.3 Data on Thefts

The new regulations would require that every licensee report discovery of theft, loss, or recovery of any firearm (Federal Register, loc. cit.).

→ storage for theft data = [(number of thefts per year) + number of recoveries per year] x (data per gun + linking) x (years) x (compounded increase in thefts) x (hash factor)

$$= (50,000 + 25,000) \times (50) \times (6) \times (1.2)$$

$$= 27,000,000 \text{ bytes}$$

-number of thefts per year = 50,000. Estimates mentioned in conversations with ATF personnel are that 50,000 firearms are stolen from carriers and dealers each year; assume that half are recovered. We assume that the theft rate remains constant over the next six years. Each theft report would list the legal owner of the firearm, its identification number, the date of the theft, and the carrier, if the device was stolen while in transit.

-data per gun = 50 bytes (as calculated in Section 3.1.1 using sophisticated encoding).

-years = 6 (as discussed in Section 3.1.1)

-hash factor = 1.2 (as stated in Section 3.1.1).

3.1.4 Data on Licensees

Rather than storing all information (e.g., address, type) on each licensee with every gun record, which would greatly increase the amount of storage needed, we would propose that this information be kept as a separate file.

→ Storage for licensee data = (# of licensees) x (information stored on each one + linking) x (compounded increase in licensees) x (hash factor)

$$= (172,000) \times (100 + 16) \times (1.34) \times (1.2)$$
$$= 32,082,816 \text{ bytes}$$

- # of licensees = 172,000. In 1976, there were 165,000 licensees, according to statistics published in the Annual Report of the Bureau of ATF (ATF publication number p.1200.2). Mr. Lester Stanford, ATF Public Information Officer, has stated in a personal correspondence that this number has since risen to 172,000.
- information stored on each = 100 bytes for address, name, type.
- linking = 16 bytes for two sets of forward and backward pointers.
- compounded increase in licensees = 134%. Assuming an annual increase in licensees of 5% and compounding over six years yields 134%.
- hash factor = 1.2 (as stated in Section 3.1.1).

3.1.5. Data on Licensees that have Merged or Gone out of Business

The Bureau would receive reports on "dispositions" brought about by a license being reissued. Whenever a new license is issued to a fire-arms business (for example when a dealer sells out, or takes on a new partner) the firearms previously in the name of the old licensee must be transferred to the new licensee, and so reported. Estimates are that 10% of the 172,000 businesses change ownership each year, and an additional 12% of them go out of business. Information on the old licensee must be kept to provide a complete trace capability.

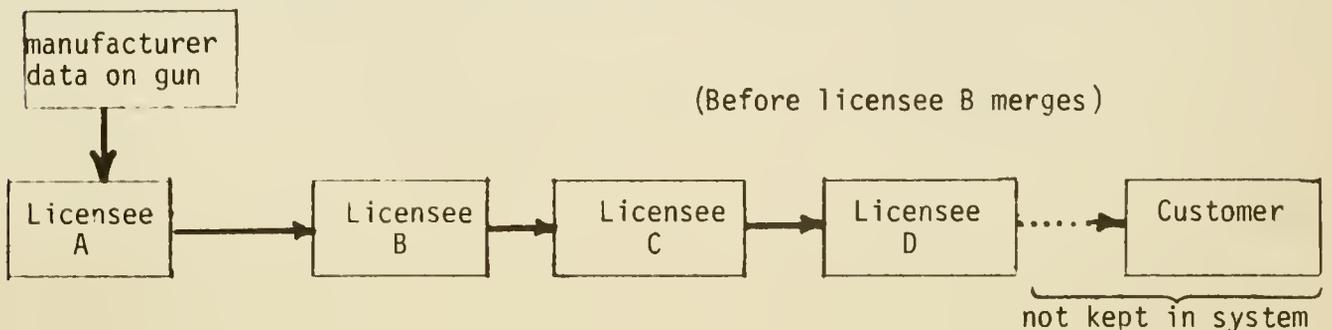
→ storage for changed licenses = (# of licensees) x (percent relicensed or gone out of business per year) x (information stored on each licensee + linking) x (years) x (compounded increase in licensees) x (hash factor)
= (172,000) x (.22) x (100 +16) x (6) x(1.34) x (1.2)
= 42,349,316 bytes

- # of licensees = 172,000 (as stated in Section 3.1.4).
- percent relicensed or gone out of business per year = 22%, as explained above.
- information on each licensee = 116 bytes (as explained in Section 3.1.4).
- years = 6 (as stated in Section 3.1.1)
- compounded increase in licensees = 134% (as calculated in Section 3.1.4).
- hash factor = 1.2 (as stated in Section 3.1.1).

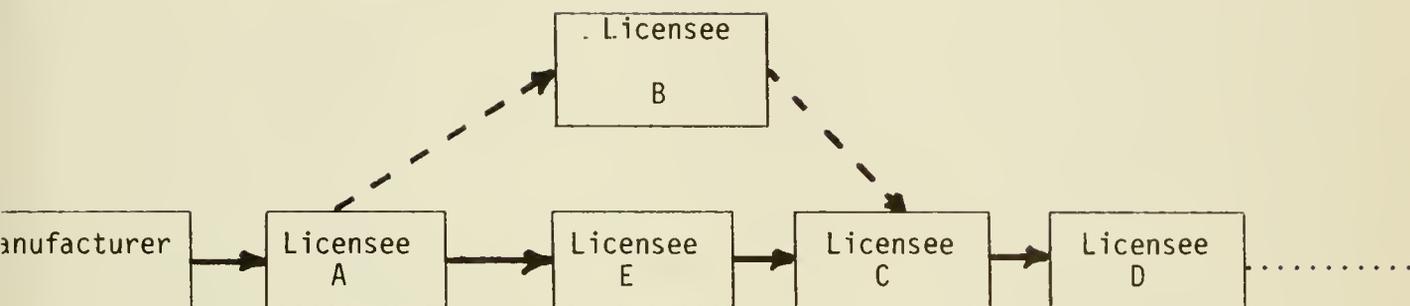
Note for licensees that have gone out of business, existing regulations require the licensee to turn in to ATF all information on customers. If this customer information were to be entered into the system then additional storage would be needed; we have not included such storage in keeping with the philosophy that ultimate customer information would not be kept in the system.

3.1.6 Data on Guns Associated with Licensees that have Merged or Gone Out of Business

If a licensee is merged with another licensee then information on all guns associated with that licensee must be updated. In the file structure presented this update could be represented as follows:



(After licensee B merges)



Hence when a merger occurs additional records must be kept. These are estimated as follows:

$$\begin{aligned} \text{storage} &= (\text{data per gun}) \times (\text{number of guns}) \times (\text{percent of guns affected}) \times \\ & (\text{years}) \times (\text{compounded increase in licensees}) \\ &= (50) \times (6,240,000 \times 1.13 + 10,000,000 \times 1.13) \times (.10) \times (6) \times (1.34) \\ &= 737,718,240 \text{ bytes.} \end{aligned}$$

- data per gun = 50, as calculated in Section 3.1.1 (using encoding)
- number of guns = 6,240,000 x 1.13 (as calculated in Section 3.1.1) plus 10,000,000 x 1.13 for used guns (as calculated in Section 3.1.2).
- percent of data affected = 10%. Twenty-two percent of the licensees go out of business or merge each year. These are typically the smaller operations (the larger businesses being more stable) so these changing licenses would generate reports on additional dispositions of somewhat less than 22% of the firearms entering the market each year. We estimate they account for 10% of the commercial traffic.
- years = 6, as stated in Section 3.1.1.
- Compounded increase in licensees = 134%, as calculated in Section 3.1.4.

3.1.7 Summary of Storage Needs

<u>Data Series</u>	<u>bytes</u>
1. data on new guns	15,231,000,000
2. data on used guns	8,136,000,000
3. data on thefts	27,000,000
4. data on licensees	32,082,816
5. data on licensees that have merged or gone out of business	42,349,316
6. data on guns disposed of by licensees that have merged or gone out of business	<u>737,718,240</u>
TOTAL	24,206,150,372

Several other factors may or will increase the storage required. Five such factors are:

1) Other data series, e.g., data on NFA firearms, ammunition, firearms imported by military personnel, and parts of firearms (frames or receivers); according to the proposed rules such data will also be kept. We have not included any storage for such data.

2) Searching techniques - We have assumed the data records are "hashed" using efficient techniques. Less efficient techniques may use more storage.

3) Additional linking information to facilitate faster accessing may be kept on each data item increasing storage required by 50%.

4) Additional data on used guns.

5) Additional bytes for possible larger size pointers.

3.1.8. Computer Storage Needed and Costs

Costs of secondary storage devices that would be appropriate for storing the estimated 24 billion bytes of information are presented below. The type and hence cost of the device depends somewhat on how rapid the response should be to trace request. One possibility is to have requests processed in a matter of minutes, much like in the NCIC system ("The NCIC & You", Dept. of Justice, FBI, January 1976). This would necessitate storing the data on disks, drums, or other direct-access storage devices. Another possibility is to have requests processed on an overnight basis. This may allow data to be stored on less expensive secondary storage. Trace requests from each day would then be handled in a batch-mode sequential processing of the data. A batch system would pose a problem for "priority requests" that require a relatively faster reply.

The size and intended uses of this data base makes many less expensive devices somewhat impractical. For example, storing this data on 2400 foot tapes at a density of 6250 bytes per inch and assuming 32,000 byte blocks with 0.6 inch interrecord gaps would require about 150 reels of tape.

Thus it appears that the most practical storage device would be disks. In determining costs, we consider two types of disk drives: a model 3330, which features a removable disk pack, and a model 3350 which has a non-removable disk pack that allows for faster access speed and higher density. Advances in technology can be expected to reduce hardware costs over the next decade. Hence to estimate costs of storage equipment six years from now, we take current prices and discount them 20%. Prices are listed for IBM equipment, not because we recommend it but simply as an example.

The devices below are presented as a sample of possibilities that would allow short turn around time and prioritizing of requests. These are not meant to be an exhaustive list.

The IBM 3330-11 disk drive, with removable disk packs

storage capacity per device:	200 megabytes
number of units required:	123
unit price:	\$67,860 (first two units with controllers for six more units) \$57,610 (each additional pair of units up to four)
total price	\$3,759,500
estimated price in 6 years (20% decrease)	\$3,007,600

The IBM model 3350 disk drive, with fixed disk packs

storage capacity per device:	317.5 megabytes
number of units required:	77
unit price:	\$62,500 (first two units with controllers for six more units) \$49,500 (each additional pair of units)
total price	\$2,060,500
estimated price in 6 years (20% decrease)	\$1,648,400

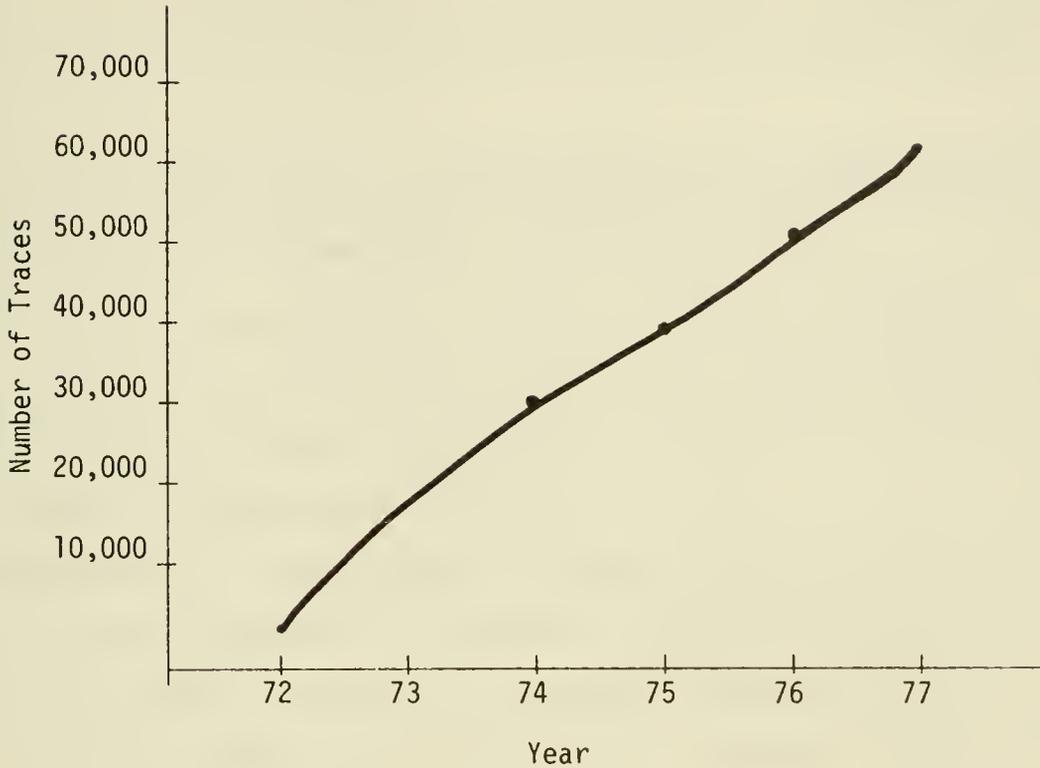
For the remainder of this study we will assume that the IBM 3350 type drive with nonremovable disks will be used for storage.

3.2 Computer Needs

To estimate the size and type of computer needed, we quantify the computations and load on such a system in terms of the number of transactions processed per year. We define a transaction as an access to a data record. Thus a user initiated action normally generates several transactions. For the proposed system there are three categories of user initiated action: query, data inputting and reports.

3.2.1 Transactions Per Year Associated with Queries

A major type of query to the system will be in response to a trace request from a law enforcement agency. Tracing charts the transfer history of a firearm from the manufacturer or importer through wholesale dealer to a retailer or first retail purchaser. Trace requests would be received by telephone, mail, TWX, or computer terminal. A graph of the number of tracings per year handled by ATF appears below.



[data taken from the following sources: "Annual Report of the Bureau of ATF, Fiscal '76," Dept. of the Treasury; ATF newsletter #FY-77-30, February 24, 1977; ATF Fact Sheet #FY-78-24, April 1, 1978].

In 1976 the Bureau traced 51,466 firearms. (The rise in the number of tracings in 1976 is attributed, in part, to the implementation of Operation CUE). Currently, the Bureau performs over 5000 tracings per month. Implementation of the regulations would result in more information becoming readily available for tracing. Local law enforcement agencies are likely to take advantage of this, such that use of this tracing service would increase substantially.

$$\begin{aligned} \rightarrow \text{transactions for queries} &= (\text{number of trace requests}) \times (\text{transactions per query}) \\ &= (200,000) \times (8) \\ &= 1,600,000 \end{aligned}$$

- number of trace requests = 200,000. Projecting the number requested this year to what it will be when the system would be operational, e.g., in six years, we estimate 200,000. This figure includes a continued compounding increase in requests for traces of 20% per year, as in the past. The availability of such a system and expected increase in crime are expected to sustain that growth rate.
- Transactions per query = 8. Must perform one access to each of the gun records corresponding to each disposition plus one access to each licensee record for each transfer. Additional transactions would be performed if information on the manufacturer or thefts was desired.

3.2.2 Transactions Per Year Associated with New Gun Data Update

Each time a gun report is filed, that data must be entered into the system, validated, and linked to corresponding records, and in the case of incorrect reports, the data must be reentered.

$$\begin{aligned} \rightarrow \text{transactions for new gun update} &= [(\text{number of data entries per year}) \times (\text{trans-} \\ &\text{actions per entry}) + (\% \text{ incorrect}) \times (\text{number of data entries per year}) \times \\ &(\text{transactions per entry})] \times (\text{compounded increase in sales}) \\ &= [(6,240,000 \times 5) \times (3 + 3) + (.05) \times (6,240,000 \times 5) \times (3 + 3)] \times (1.13) \\ &= 222,113,000 \end{aligned}$$

- number of data entries per year = (6,240,000 x 5) is equal to number of guns sold times the number of reports per gun (one from the manufacturer plus four on dispositions).
- transactions per entry = (3 + 3). Adding one entry to the chain (see Section 3.1.6) would require updating the forward or backward pointers of entries already in the chain; we estimate 3 such accesses (one access to add entry, two to update entries in chain). An estimated 3 transactions would be needed to validate the data, e.g., check manufacturer, etc., or link to other chains.
- % incorrect = 5%. This assumes a 5% entry or reporting error rate.
- compound increase = 113%, as in section 3.1.1.

3.2.3 Transactions for Update of Used Gun Data

Data from reports that are filed on used guns must also be entered into the system.

$$\begin{aligned} \longrightarrow \text{transactions for used gun update} &= [(\text{number of data entries per} \\ &\text{year}) \times (\text{transactions per entry}) + (\% \text{ incorrect}) \times (\text{number of} \\ &\text{data entries per year}) \times (\text{transactions per entry})] \times (\text{compounded} \\ &\text{increase in sales}) \\ &= [10,000,000 \times 2) \times (3+3) + (.05) \times (10,000,000 \times 2) \times (3+3)] \times (1.13) \\ &= 142,380,000 \end{aligned}$$

3.2.4 Transactions Per Year Associated with Licensee Data Update

As dealers merge or go out of business two types of data records must be updated: the data on licensees and the data on guns as described in Sections 3.1.5 and 3.1.6.

$$\begin{aligned} \longrightarrow \text{transactions for licensee data update} &= (\text{number of dealers merging or going} \\ &\text{out of business}) \times (\text{transactions per update of licensee data}) \times \\ &(\text{compounded increase in licensees}) + (\text{update information of gun to be} \\ &\text{reassigned to merged company}) \\ &= (.22 \times 172,000) \times (2) \times (1.34) + (6,240,000 + 10,000,000) \times (.10) \times (5) \times (1.13) \\ &= 9,277,011 \end{aligned}$$

- number of dealers merging or going out of business = (.22 x 172,000) as calculated in Section 3.1.4.

- transaction per update of licensee data = 2- one access to add element in chain, one access to update last element in chain

- compounded increase in licensees = 134%, as calculated in Section 3.1.4.

- update information on guns to be reassigned:

(number of new and used guns) x (weighted by % of market) x (transaction to update) x (compounded increase in gun sales)

$$\begin{aligned} &= (6,240,000 + 10,000,000) \times (.10) \times (5) \times (1.13) \\ &= 9,175,600 \end{aligned}$$

-number of transactions to update = 5, including one to add new merger entry (Section 3.1.5) and four to update pointers.

-compounded increase in new and used gun sales = 113%, as calculated in Section 3.1.1.

Note no transactions have been added for entering data on customers of licensees that have gone out of business.

3.2.5 Transactions per Year Associated with Theft Data Update

$$\begin{aligned} \rightarrow \text{transactions} &= (\text{number of thefts} + \text{number of recoveries}) \times (\text{transactions per} \\ &\quad \text{theft update}) \\ &= (50,000 + 25,000) \times (3) \\ &= 225,000 \end{aligned}$$

-transactions per theft update = 3 -one update access and two pointer-change accesses.

3.2.6 Transaction Per Year Associated with Generation of Reports (e.g., generation of report to pinpoint unusual traffic of firearms)

A variety of analytical reports could be produced from the accumulated data each year. For some reports, the data could be structured (with pointers) for efficient accessing and subsequent report-generation. Such reports might include: a list of all guns stolen in a particular year, or a list of all guns manufactured by a certain company. For other reports, major portions of data stored in the system would have to be examined to generate the report. An example of such a report is a list of all sites where gun sales have increased by 50% over the past year.

The number of transactions needed to produce an analytical report would have a high variance, depending on the nature of the report. We estimate that an average report would involve examining one percent of the data base (.01). Therefore, the number of transactions needed to generate reports each year can be estimated as follows:

$$\begin{aligned} \rightarrow \text{transactions for reports} &= (\text{number of reports per year}) \times (\text{transactions per} \\ &\quad \text{report}) \\ &= 200 \times (\text{number of data records accessed}) \\ &= 200 \times [(.01) \times (\text{total records in system})] \\ &= 200 \times [(.01) \times (\text{gun data records} + \text{theft data records} + \text{licensee data} \\ &\quad \text{records} + \text{records of data on guns affected by mergers})] \end{aligned}$$

$$\begin{aligned}
 &= 200 \times [(.01) \times [(6,240,000 \times 5 + 10,000,000 \times 2) \times (6) \times (1.13) \\
 &\quad + (75,000) \times (6) \times (1.42) \\
 &\quad + [(172,000) + (172,000) \times (.22) \times (6)] \times (1.34) \\
 &\quad + (6,240,000 + 10,000,000) \times (1.13) \times (6) \times (1.34)]] \\
 &= 200 \times [(.01) \times 495,853,360] \\
 &= 991,706,720
 \end{aligned}$$

- gun data records includes those for new and used guns (as discussed in sections 3.1.1 and 3.1.2)
- theft data records includes those on theft and recovery of guns (as discussed in Section 3.1.3.)
- licensee data records includes those on active licensees and those on licensees that have merged or gone out of business (as discussed in Sections 3.1.4 and 3.1.5.)
- records of data on guns affected by mergers includes those discussed in Section 3.1.6.

3.2.7 Summary of Transactions

<u>TYPE OF USER</u>	<u>NUMBER</u>	<u>ON LINE</u>
tracing queries	1,600,000	yes
new gun data update	222,113,000	not necessary
used gun data update	142,380,000	not necessary
licensee data	9,277,011	not necessary
theft data update	225,000	not necessary
generation of reports	991,706,720	not necessary
TOTAL TRANSACTION PER YEAR	1,367,301,731	

Note that certain of these transactions may be batched since fast response time may not be needed.

Several other factors may increase the number of transactions to be processed. Two of these are:

- 1) Entering data from reports on NFA firearms, ammunition, firearms imported by military personnel, and firearm parts will require additional transactions. We have not included transactions to enter these data series.
- 2) Whenever the space allocated for a segment of data overflows, transactions will be required to redistribute the data into additional segments and create pointers to them. We have not included transactions to handle this process.

3.2.8 Computer Needs and Costs

With a total of 1,367,301,731 transactions per year and a data base of 24 billion bytes the proposed system is comparable in these respects to several existing information systems, e.g., an airline reservation system (excepting for some difference in the volatility of the data), Hertz Rent-a-Car system, and others.* The computer capacity to support such systems is equivalent to an IBM 370/168. We would therefore estimate that a 370/168 or equivalent would be suitable for this application. Present purchase price (including a main frame, and enough core memory to support an operating system), is \$2,426,500. Assuming a 50% reduction in the purchase price in six years yields an estimated cost of \$1,213,250. To allow for back up, two systems may be run in parallel and hence, total costs for computers would be \$2,426,500.

* See Section 8.0.

3.3 Telecommunications and Peripherals Needed

It is expected that law enforcement agencies will submit their trace requests to district ATF offices, who will in turn feed the requests to the data center. An initial approximation of the required telecommunications equipment comes from assuming that this would involve a network similar to ATF's portion of the Treasury Enforcement Computer System (TECS). The Bureau has about 60 telecommunications terminals, located in regional and district offices, connected up to the TECS center in San Diego. An estimated 250 additional terminals or key-to-disk devices will be required at the central site for data entry and report generation.

For terminals, key-to-disk devices, multiplexors, concentrators, and front end processors, we estimate average purchase costs of \$2,000 per device, totalling \$500,000. We estimate an additional annual expense of \$250,000 for the use of telecommunications network.

For report generation, specialized data needs, and system maintenance, the computer system would also need various peripheral devices including printers, plotters, tape drivers, etc. We estimate these costs at \$1,000,000; hence, with a 20% reduction in six years we estimate these costs at \$800,000.

3.4 Computer Requirements

RESOURCE	AMOUNT REQUIRED	PURCHASE PRICE	RENTAL/YEAR**
STORAGE	24,206,150,372 bytes	\$1,684,400	\$494,500
ANNUAL MAINTENANCE CONTRACT			\$75,400
COMPUTER	1,367,301,731 transactions per year (370/168)	\$1,213,250	\$363,975
ANNUAL MAINTENANCE CONTRACT			\$66,000
PERIPHERAL DEVICES (line printers, tape drives, plotter, etc.		\$800,000	\$240,000
ANNUAL MAINTENANCE CONTRACT			\$43,520
TELECOMMUNICATIONS			
Equipment		\$500,000	\$150,000
Network		___*	\$250,000
		TOTAL	\$1,683,395

*Telecommunications lines customarily cannot be purchased

**Monthly rental costs taken to be 1/40th of purchase price

4. Personnel Per Year

Personnel will be required to maintain data (e.g., enter, validate, and update data), respond to queries, generate reports, and maintain software, and hardware.

4.1 Personnel to Maintain New Gun Data

Each quarter the bureau would receive reports from each of the 172,000 licensees on an average of 6,240,000 dispositions of new guns along with reports on the manufacturing or importation of 1,560,000 firearms. ("Annual Report of the Bureau of ATF," Fiscal '76, Dept. of the Treasury). It is estimated by ATF that licensees representing 20% of this commerce have data processing facilities that would allow them to submit their quarterly reports on electronic medium (magnetic tape, floppy disks, etc.)

As the data series on new guns is large and represents a significant portion of the entry costs we will assume that ATF will be successful in requiring licensees to submit another 10% of the data in machine readable form, either via optical character recognition fonts or tape. Note we have not investigated the political or legal implications, or cost to the licensee of such a requirement but from a technical point of view, such a requirement results in 30% of the data being submitted in machine readable form hence reducing personnel required for data entry.

The remainder of the data (reports on dispositions and new guns) would arrive on paper forms and would require manual transcription into the data base.

→ Total personnel to Enter New Gun Data=

(personnel to enter gun data not in machine readable form) +
(personnel to open envelopes and preprocess) +
(personnel to enter machine readable data).

Personnel = personnel A + personnel B + personnel C

We calculate each of these components as follows:

$$\begin{aligned}
\text{personnel A} &= (\text{amount of new gun data}) \times (\text{time spent per entry}) \\
&= (\text{number of new guns} - \text{portion reported in machine readable form}) \\
&\times (\text{reports per gun}) \times (\text{time spent per entry}) \\
&\times (\text{compounded sales increase}) \\
&= (6,240,000 - (.3 \times 6,240,000)) \times (5) \times (1 \text{ minute}) \times (1.13) \\
&= 24,679,199 \text{ minutes} \\
&= 411,320 \text{ man hours} \\
&= 11,752 \text{ man weeks (assume a 35 hour week)} \\
&= 235 \text{ man years (assume a 50 week year)}
\end{aligned}$$

- reports per gun = 5. For each gun there would be one manufacturer's report and four disposition reports.

- time spent per entry = 1 minute. We assume an average of 90 characters per entry (including characters for verification) and an average keystroke rate of 1 1/2 characters per second.*

(e.g. open envelopes and examine reports.)

$$\begin{aligned}
\text{personnel B} &= (\text{number of forms}) \times (\text{time spent per form}) + (\text{forms} \\
&\quad \text{rejected}) \times (\text{time per rejection}) \\
&= (688,000) \times (4 \text{ minutes}) + (10\%^{**} \times 688,000) \times (4 \text{ minutes}) \\
&= 3,027,200 \text{ minutes} \\
&= 50,453 \text{ hours} \\
&= 1442 \text{ weeks} \\
&= 29 \text{ man years}
\end{aligned}$$

* According to the IRS public informations officer, John Mannion, for data entry from individual tax returns the key stroke rate is about 1 per second. A study by BGS Systems, Inc. indicated rates of two strokes per second.

** Estimates provided by IRS are that 8% of the individual income tax returns contain errors causing them to be rejected.

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- time spent per form = 4 minutes. This is the time spent to process paper work per form prior to data entry, and to filter out rejected forms.
- time per rejection = 4 minutes. This includes time to communicate to the sender the nature of the error, e.g., missing address, date of sale missing, etc. This communication may be by filling out a form and mailing it to the sender.

personnel C = 10 people required to process the machine readable data (e.g., mount tapes, handle forms)

Total personnel to enter new gun data = $235 + 29 + 10$
= 274 man years.

4.2 Personnel to Maintain Used Gun Data

Each quarter the Bureau would also receive reports on an average 2,500,000 acquisitions and 2,500,000 dispositions of used guns. Since this activity occurs at the local dealer level, we estimate that 10% (as opposed to 30% for new guns) of these reports would be submitted on electronic medium. The remaining data would arrive on paper form and would require manual transcription into the data base.

$$\begin{aligned} \longrightarrow \text{personnel} &= (\text{amount of used gun data}) \times (\text{time per entry}) \\ &= (\text{number of used guns} - \text{portion reported in machine readable form}) \\ &\times (\text{reports per gun}) \times (\text{time spent per entry}) \times (\text{compounded sales increase}) \\ &= (10,000,000 - (.1 \times 10,000,000)) \times (2) \times (1 \text{ minute}) \times (1.13) \\ &= 20,340,000 \text{ minutes} \\ &= 339,000 \text{ hours} \\ &= 9,686 \text{ weeks} \\ &= 193 \text{ man years} \end{aligned}$$

- number of used guns = 10,000,000 (as discussed in Section 3.1.2) less 10% reported in machine readable form (as discussed below)
- reports per gun = 2. For each gun there would be one acquisition plus one disposition report.
- time per entry = 1 minute, as discussed in Section 4.1.1
- compounded sales increase = 113%, as computed in Section 3.1.1

We assume no additional people will be required to expedite processing of forms or handle machine readable data. This effort is included in manpower to process forms in Section 4.1.

4.3 Personnel to Enter Data on Thefts

$$\begin{aligned} \longrightarrow \text{personnel} &= (\text{number of thefts} + \text{recoveries}) \times (\text{time spent per entry}) \\ &= (50,000 + 25,000) \times (1 \frac{1}{2} \text{ minutes}) \\ &= 112,500 \text{ minutes} \end{aligned}$$

= 1,875 hours

= 54 weeks

= 1 man year

4.4 Personnel to Enter Data on Licensees

→ personnel = (number of licensees which change) x (time spent) x (compounded increase in licensees)

= (.22) x (172,000) x (2) x (1.34)

= 101,410 minutes

= 1,690 hours

= 48 weeks

= 1 man year

4.5 Personnel to Reenter Incorrect Data

Assuming 5% of the data must be changed either because of incorrect report or entry of data:

→ personnel = (reentry %) x (manpower to enter data)

= (.05) x (235 + 193 + 1 + 1)

= 22 man years

- personnel to enter data = 430, the total manpower requirements computed in sections 4.1, 4.2, 4.3 and 4.4.

4.6 Personnel to Answer Queries, e.g., Trace Requests

These personnel would receive trace requests over a telephone or in the mail and enter them into the computer, via a terminal. The computer would return the history of dispositions of the gun, up to the final licensee. This information would then be reported (via mail or telephone) to the requesting law-enforcement agency.*

* We assume that contacting the dealer for the name of the gun buyer will remain the responsibility of the law-enforcement agency. Should ATF decide to perform this step of the trace, then their manpower requirements will increase.

→ personnel = (number of queries) x (time per query)

= (200,000) x (15)

= 3,000,000 minutes

= 50,000 hours

= 1429 weeks

= 29 man years

- number of queries = 200,000 (as calculated in Section 3.2.1).

- time per query = 15 minutes. This includes time to answer phone (or open mail request), key in query, and return call.

At present, ATF has 23 personnel handling traces (ATF News Release, April 1, 1978).

4.7 Personnel to Produce Reports

These personnel would produce the desired analytical reports. For some reports they would activate a standard report-generating program. For other nonroutine reports they would do the necessary analysis (e.g. statistical), write the appropriate computer programs and use the generated computer output to prepare a formal report.

The personnel effort in producing a report will vary widely depending on the type of report. We estimate that as much as six man months could be involved in producing a complex report where as little as one week would be involved in producing (executing a routine, checking, mailing, etc.) a simple report. We thus use as an average, 1.5 man months per report.

→ personnel = (number of reports) x (time spent per report)

= (200) x (1.5months)

= 300 man months

= 25 man years

4.8 Personnel for Software and Hardware Maintenance

Based on this system's similarity to other information systems, we project about 30 to 60 people will be needed to support the normal functioning of the system. This includes manpower for operation of the central-site hardware, and manpower for maintenance of existing software.

4.9 Summary of Personnel Needed Per Year

<u>PERSONNEL</u>	<u>PERSONS/YEAR</u>
enter new gun data	274
enter used gun data	193
enter data on thefts	1
enter data on licensee	1
reenter incorrect data	22
queries	29
reports	25
software and hardware	45
administrative at 1:10*	<u>59</u>
TOTAL	649

Several other factors may or will increase personnel required. These include:

- 1) If additional regulations requiring that data be submitted in machine readable form are not enacted, i.e., we have assumed 30% of the new gun data is reported in machine readable form. If this number should be 10% then an additional 140 personnel will be needed yearly.
- 2) Entry of data on NFA firearms, ammunition, firearms imported by military personnel, and parts (frames and receivers) will require additional personnel.

* We assume a simple ratio of 1:10 for administrative personnel and do not include administrators for administrators.

- 3) Administrative personnel have been assumed at a 1 to 10 ratio, that is, for every 10 workers, there exists one administrative personnel. This ratio may be low as it would include accountants, receptionists, telephone operators, supervisory personnel, etc.
- 4) We have assumed that personnel never get sick, are never tardy, and maintain maximum productivity seven hours per day, five days a week.
- 5) Updating the status of each licensee with regards to the annual renewal of his license will require additional personnel.

5. Summary of Operational Requirements and Costs

RESOURCE	AMOUNT	PURCHASE COST	APPROXIMATE COST PER YEAR
STORAGE	24,206,150,372	\$1,648,400 (1)	
MAINTENANCE CONTRACT			\$75,400
COMPUTER POWER	process 1,367,301,731 transactions (370/168)	\$1,213,250 (1)	
MAINTENANCE CONTRACT			\$66,000
PERIPHERAL DEVICES		\$800,000 (1)	
MAINTENANCE CONTRACT			\$43,520
TELECOMMUNICATIONS			
TERMINALS	60 remote trmnls 250 local trmnls	\$500,000	\$150,000
MAINTENANCE NETWORK	60 lines		\$250,000
PERSONNEL FOR DATA ENTRY	491		
PERSONNEL FOR QUERIES AND REPORTS	54		\$16,422,500
PERSONNEL FOR SOFTWARE AND HARDWARE MAINTENANCE	45		
PERSONNEL FOR ADMINISTRATION	59		(2)
TOTAL PERSONNEL	650		
TOTAL			\$17,007,420

- Assumes decreases in costs of hardware as calculated in Section 3.2
- Assume salary + benefits + overhead = \$15,000, with 7% annual increase over next six years = \$22,500 per man year, for data handling personnel and salary + benefits + overhead = \$40,000 for technical and administrative personnel.

Note several factors could increase the costs of hardware. These include:

1. costs of back-up system.
2. additional linking information stored.
3. storing data on customers of licensees that have gone out of business.
4. sorting techniques.
5. assumed reductions in prices, due to technological advances, are not realized.

6 Implementation Costs

In this section we estimate costs of design, software implementation and initialization of the data base, i.e., the costs incurred from the time that the decision is made to proceed to the time that the system is fully operational and replaces the current manual system.

6.1 Design Costs

The initial design costs for the proposed system include the items tabulated below.

INITIAL DESIGN COSTS

TASK	ESTIMATED MAN YEARS	COMMERCIAL RATE FOR LEVEL OF PERSONNEL REQUIRED (including overhead)	TOTALS
SPECIFICATION OF USER REQUIREMENTS	6	\$50,000	\$300,000
SPECIFICATION OF FUNCTIONAL REQUIREMENTS	6	\$50,000	\$300,000
DESIGN OF DATA BASE	4	\$50,000	\$200,000
SPECIFICATION OF HARDWARE AND SOFTWARE	6	\$50,000	\$300,000
		TOTAL	\$1,100,000

6.2 Software Costs

The costs of implementing software for the proposed system include the items tabulated below. These costs cover the initial effort to program, debug, and document the software. Additional costs of efforts to refine the system beyond its initial implementation are discussed in Section 6.3. The estimated costs for commercial personnel include benefits and overhead, and may be somewhat low for the level of personnel required (e.g., the average starting salary of a Sloan School management information systems graduate in 1977 was \$24,000).

SOFTWARE IMPLEMENTATION COSTS

1

TASK	ESTIMATED MAN YEARS	COMMERCIAL BURDENED RATE FOR LEVEL OF PERSONNEL REQUIRED (SALARY, BENEFITS AND OVERHEAD)	TOTAL
Purchase of Data Base Software and Report Generator	---	-----	\$150,000
Installation, Maintenance and Administration of Data Base Software	10	\$60,000	\$600,000
Extensions to Report Gener- ator for Statistical Analysis	10	\$60,000	\$600,000
Development of Application Software	30	\$60,000	\$1,800,000
Installation and Mainten- ance of Communications Software	5	\$60,000	\$300,000
Tuning and Adapting System Software	4	\$60,000	\$240,000
System Check-out and Acceptance Testing	30	\$50,000	\$1,500,000
		TOTAL	\$5,190,000

Footnotes appear on next page.

1. Costs of hardware to support software development have not been included in these figures. It is assumed that hardware used to support the development staff will be incrementally acquired as a part of the operational system. Maintenance costs will be included in Section 6.3.

6.3 Costs of Data Initialization

Licensees would be required to submit reports beginning 90 days after the regulations are enacted. However, before the present manual system can be replaced, a total of six years of data must be gathered and stored in the computer system for it to be effective. The data cannot be loaded into the system until the software becomes operational. We assume that while the software is being implemented this data is gathered and prepared for loading into the final system, (e.g., for three years the data is placed on tapes, edited and validated). The three years of accumulated data can be loaded into the newly created system (not yet fully debugged). For the next three years data can be input into this system while debugging of the system also takes place. Hence in six years, simultaneously with the availability of the software, six years of data will be available.

The data initialization costs are as follows:

$$\longrightarrow \text{initialization} = (\text{annual costs for data entry and administrative personnel}) \\ \times (\text{years})$$

$$= (\$11,047,500 + \$1,960,000) \times 6$$

$$= \$78,045,000$$

-personnel costs = \$13,007,500, as presented in Section 4.9.

-years = 6, as discussed above and in Section 3.

We estimate that maintenance on hardware needed to support the software development and data base initialization will cost a total of \$150,000 over the six years. This assumes work will begin with a minimal configuration and equipment will be incrementally added.

6.4 Summary of Implementation Costs

IMPLEMENTATION COSTS

ITEM	COST
INITIAL DESIGN OF THE SYSTEM	\$1,100,000
SOFTWARE IMPLEMENTATION	\$5,190,000
DATA INITIALIZATION	\$78,045,000
TOTAL	\$84,335,000

7.0 Cost summary

Based on all of the assumptions stated in this report, investment, startup and operational costs are as follows:

Investment:

Purchase of hardware	\$ 4,161,650	
Purchase of database software	150,000	
System design	1,100,000	
System development and checkout	<u>5,190,000</u>	
		\$10,601,650

Startup:

Initialization of database over six years (personnel cost)	\$ 78,045,000	
Maintenance of hardware during startup	<u>150,000</u>	
		\$78,195,000

Operating cost:

Personnel	\$ 16,422,500	
Hardware maintenance and communications cost	<u>584,920</u>	
		\$17,007,420

8.0 Costs and Requirements Associated with Other Systems

The following chart presents data, where available, on several systems which have been implemented.

SYSTEM / RESOURCE	PRODUCTION SYSTEM	SAGE	WORKS	PLAN OF AMERICA FINANCIAL DATA ANALYSIS SYSTEM	SEPARATION UNIT INFORMATION SYSTEM	U.S. ARMY PERSONNEL SYSTEM	HARZ R-VIA-UN RESERVATION SYSTEM	FBI NCIC SYSTEM	AMERICAN AIRLINES RESERVATION SYSTEM	PAN AMERICAN AIRLINES RESERVATION SYSTEM	UNITED AIRLINES RESERVATION SYSTEM	DELTECONMIC MULTITAP SYSTEM	PAID-DATA TIME-SHARING SYSTEM
STORAGE (BYTES OF DATA)	24,206,160,372				29,000,000	940,000,000	1,600,000,000	7,000,000 RECORDS	12,600,000,000	1,728,000,000	6,000,000,000	5,000,000,000	15,000,000,000
DATA-BASE TRANSACTIONS PER YEAR	1,207,200,731			275,000	14,500,000	17,300,000	64,000,000	95,000,000	2,200,000,000	1,601,000,000	1,625,000,000	10,950,000	3,285,000,000
COMPUTER USED	370/165					TWO DUAL-PROCESSOR 1108'S	T-0 UNIVAC 1182'S	360/65	ARC40L 470	370/158	2 370/185'S 1 370/65	Burruphs 7200	
TELECOMMUNICATIONS EQUIPMENT	60 REMOTE TERMINALS 250 LOCAL TERMINALS			30 TERMINALS	600 TERMINALS	70 TERMINALS	85 WATS LINES, 3000 PRESSURED SERVICE LINES	170 LINES (6,000 TERMINALS)	6,000 TERMINALS	1,600 TERMINALS	6,000 TERMINALS	600 TERMINALS	600 TERMINALS
PERSONNEL FOR DATA ENTRY	491					5	4		4	10 FOR REPORT SCHEDULE REVISIONS	4	19	
PERSONNEL FOR QUERIES AND REPORTS	54					35			40	12	55	20	
PERSONNEL FOR SOFTWARE AND HARDWARE MAINTENANCE	45					0 SOFTWARE MAINTENANCE ONLY		34	75	13 SOFTWARE 40 HOURS	65	40	24
SOFTWARE DESIGN AND IMPLEMENTATION COSTS	6,290,070	\$250,000,000	\$722,000,000	\$1,000,000	\$2,600,000	60 MAN YEARS	183 MAN YEARS			\$1,200,000 PLUS 50 MAN YEARS	\$25,000,000		50 MAN YEARS
INITIALIZATION COSTS (DATA COLLECTION AND LOGGING TO MAKE OPERATIONAL)	\$70,196,000	(2)	(2)							(2)	(2)		
HARDWARE MAINTENANCE P.V. TELECOMMUNICATIONS NETWORK COSTS PER YEAR	\$564,920			\$400,000	\$4,000,000		\$3,000,000 TELECOMMUNICATIONS ONLY	\$2,900,000			\$10,000,000	\$1,200,000	\$496,000

Footnotes for "Existing Systems" Chart

1. The SAGE system, Datamation, May, 1973, p. 48.
2. Costs for data initialization are assumed to be included in the software implementation costs.
3. The World Wide Military Command and Control System. Datamation, March 1, 1971, p. 41.
4. Updating of information in the data base is generally not a separate activity. Rather, it is done by the system users in conjunction with making queries to the data base.
5. The U.S. Army personnel system is actually two separate systems: one for enlisted personnel and one for officers. Because they were implemented and operated by the same organization, we have combined the statistics for the two systems in this report.
6. This figure includes effort required to adapt the system 2000 Data Base package acquired from a commercial vendor; it does not include the vendor's effort required to develop the System 2000 package, estimated to be 100 man years.
7. This figure includes 120 man years of effort for the original implementation on a Univac 70/6, plus 63 man years to convert the system for use on two Univac 1182's (conversion currently underway).
8. This figure includes 21 operational personnel (including telecommunications personnel) seven programmers, five system analysts, two managers, and one special agent.
9. These figures cover \$1,200,000 for development in 1963 and 1964, plus 50 man years for new developments over the last 5 years.
10. The three machines are used for on-line reservation processing, batched-job processing, and experimental development.
11. This figure includes primarily personnel for applications-program development.
12. Estimates are that the original implementation costs were \$25,000,000 - \$35,000,000. Exact figures were not available.

APPENDIX A

Federal Register

TUESDAY, MARCH 21, 1978
PART III



DEPARTMENT OF THE TREASURY

Bureau of Alcohol,
Tobacco and Firearms



FIREARMS REGULATIONS

[4810-31]

DEPARTMENT OF THE TREASURY

Bureau of Alcohol, Tobacco and
Firearms

[27 CFR Parts 178 and 179]

[Notice No. 321]

FIREARMS REGULATIONS

AGENCY: Bureau of Alcohol, Tobacco
and Firearms (ATF).ACTION: Notice of proposed rulemak-
ing.

SUMMARY: This notice proposes that (1) licensed manufacturers and licensed importers put a unique serial number on each firearm imported into or manufactured in the United States; (2) each Federal firearms licensee report to ATF any theft, loss, or recovery of a firearm; (3) each licensed manufacturer submit to ATF a quarterly report of firearms manufactured; and (4) each licensed manufacturer, licensed importer, and licensed dealer submit to ATF a quarterly report of firearm dispositions. Implementation of the proposals would significantly improve ATF's ability to gather information necessary to enforce Federal firearms laws, to curtail firearms thefts, and to assist State and local law enforcement agencies in their enforcement responsibilities. In determining whether to adopt these proposed regulations, the Bureau will also consider during the comment period the burdens and costs of these proposals.

DATE: Comments must be submitted on or before May 22, 1978.

ADDRESS: Send comments, in duplicate, to: Director, Bureau of Alcohol, Tobacco and Firearms, Washington, D.C. 20226, Attention: Regulations and Procedures Division.

FOR FURTHER INFORMATION CONTACT:

J. A. Hunt or A. N. Stickney, Research and Regulations Branch, 202-566-7626.

SUPPLEMENTARY INFORMATION:

PROPOSED CHANGES

The sections under 27 CFR Parts 178 and 179 with proposed changes are as follows:

UNIQUE SERIAL NUMBERS

1. Sections 178.92 and 179.102. These sections would be amended substantially to require licensed manufacturers and licensed importers to identify each firearm by a serial number which would be unique to the licensee and to the firearm. The format of the unique serial number would consist of 14 characters as follows: The first three

characters would identify the manufacturer or importer; the fourth and fifth would be the last two digits in a production or importation year; the sixth and seventh would identify the firearm model and caliber or gauge; the eighth through fourteenth would be the serialized numerals of the model produced or imported during a production or importation year. The unique serial number would standardize the basic identification appearing on all firearms. This standardization would naturally assist law enforcement official in accurately identifying recovered and confiscated firearms and will eliminate confusion in tracing weapons associated with crime, and expand the ability to trace these weapons. This ability to accurately identify would improve changes of successful prosecutions.

The following diagram is the proposed format for the unique serial number:

Example of One Line	
3CT78PP0013425	
Example of Two Lines	
3CT78PP 0013425	minimum of ¼ inch or ⅜ mm apart

REPORTING THEFTS OF FIREARMS

1. Section 178.128. Federal and State law enforcement agencies have found that stolen firearms are a major source of firearms used in crime. As a result, the Director proposes to amend present firearms regulations to assist in dealing with the problem of firearm thefts. A new section is proposed, § 178.128, which would require that information of a firearm theft, loss, or recovery be reported to ATF. This proposed requirement would provide ATF with better information on where and when firearms leave legal commerce. This knowledge would improve ATF's ability to deter thefts and losses of firearms as well as investigate those which have occurred.

As proposed, the licensee would prepare ATF F 3310.8A "Record and Report of Theft, Loss, and Recovery of Firearms (including frames or receivers), and report the required information by telephoning the toll-free or collect telephone number appearing on the form within 24 hours of discovering the theft, loss, or recovery. Within 7 days of a discovery, the licensee would mail the completed pre-addressed form. The licensee would retain the copy of the completed form on the licensed premises and make an entry of each recorded and reported firearm into the firearms receipt and disposition record, as required by Subpart H of 27 CFR Part 178.

REPORTING FIREARMS MANUFACTURE AND
DISPOSITION

1. Section 178.130 Quarterly report of firearms manufactured. This proposed new section would require the use of form ATF F 5300.11, Quarterly Firearms Manufacturing Report, to be submitted quarterly by licensed manufacturers of firearms. The quarterly report would identify the number of firearms manufactured within a 3 month period. This report, known presently as Form 4483-A, is submitted currently under the general reporting requirement in § 178.126.

2. Section 178.131 Quarterly report of firearms disposition by licensed importers, licensed manufacturers, and licensed dealers. This proposed new section would require licensees to submit to the Director a quarterly report of their sales or other dispositions of firearms. However, reports of sales or other dispositions, by licensed importers, licensed manufacturers and licensed dealers would not identify a nonlicensed transferee by name and address.

These two reports submitted to the Bureau would provide a readily available source of firearms information to improve the tracing of firearms used in crimes. This information would also enable the Bureau to put resources more effectively into problem areas. The data would also provide important information on firearms entering commercial channels for the Bureau and other law enforcement agencies, particularly any unusual flow of firearms which would warrant investigation. This information also would provide invaluable assistance in identifying dealers who may be illegally diverting firearms and selling them contrary to law.

MISCELLANEOUS AMENDMENTS

Miscellaneous amendments, which would further conform the regulations to the proposed changes, are as follows:

1. The table of sections to Part 178 would be amended to reflect the redesignation of § 178.126a to § 178.129 and the addition of §§ 178.128, 178.129, 178.130, and 178.131.

2. Several sections provide dates the regulations would become effective.

3. Existing sections affected by the proposed changes would be revised to achieve clarity and readability. Minor editorial changes would also be made.

PUBLIC PARTICIPATION

ATF requests comments from all interested persons. Of particular interest are comments from State and local law enforcement officials, as well as other public officials, on the effects these proposed regulations would have on their law enforcement efforts. In addition, comments from the firearms

industry on costs of the proposed unique serial number and reporting requirements are especially requested.

All comments received before the closing date will be carefully considered. Comments received after the closing date and too late for consideration will be treated as possible suggestions for future ATF action.

Copies of the proposed changes and of written comments are available for public inspection during normal business hours at the following location:

Public Reading Room, Room 4408, Federal Building, 12th and Pennsylvania Avenue NW., Washington, D.C.

Copies of the proposed forms may be requested from:

Regulations and Procedures Division, Bureau of Alcohol, Tobacco and Firearms, Washington, D.C. 20226.

Any interested person who desires an opportunity to comment orally at a public hearing on these proposed regulations should submit his or her request, in writing, to the Director within the 60-day comment period. The Director, however, reserves the right to determine, in the light of all circumstances, whether a public hearing should be held.

DRAFTING INFORMATION

Officials from the Bureau of Alcohol, Tobacco and Firearms and from the Treasury Department jointly participated in developing the proposals, both on matters of substance and style.

AUTHORITY

Accordingly, under the authority contained in 18 U.S.C. 926, as amended (82 Stat. 1228), the Director proposes to amend 27 CFR Parts 178 and 179 as follows:

PART 178—COMMERCE IN FIREARMS AND AMMUNITION

1. The table of sections in 27 CFR Part 178, Subpart H is amended to read as follows:

Subpart H—Records and Reports

Sec.

- 178.128 Recording and reporting theft, loss, and recovery of firearms.
- 179.128 Recording multiple sales or other disposition of pistols and revolvers.
- 178.130 Quarterly report of firearms manufacture.
- 178.131 Quarterly report of firearms disposition by licensed importers, licensed manufacturers, and licensed dealers.

2. Section 178.92 is revised to read as follows:

§ 178.92 Identification of firearms.

(a) *Unique serial numbers.* (1) After—[180 days after the final regu-

lation is published in the **FEDERAL REGISTER**], each licensed importer or licensed manufacturer of each firearm imported or manufactured shall affix a unique serial number on—

- (i) Each firearm; and
 - (ii) Each firearm frame or receiver which is not a component part of a complete firearm at the time it is sold, shipped, or otherwise disposed of by a licensed importer or licensed manufacturer.
- (2) The unique serial number shall be engraved, cast, stamped (impressed), or otherwise conspicuously placed or caused to be engraved, cast, stamped (impressed), or placed on the frame or receiver of a completed firearm in a manner not susceptible of being readily obliterated, altered, or removed.

However, the unique serial number shall be inconspicuously placed on the frame or receiver by licensed manufacturers or importers of frames or receivers which are to be sent to another licensed manufacturer. Additionally, a licensed manufacturer or importer of frames or receivers to be sent to another licensed manufacturer may omit the sixth and seventh characters of the unique serial number if a model and caliber or gauge is unknown.

(3) The unique serial number format on the frame or receiver of the firearm shall consist of 14 characters as follows:

- (i) The first three characters shall be assigned by the Director and shall be uppercase alphabetical characters, or combined uppercase alphabetical and numerical characters, identifying the importer or manufacturer;
- (ii) The fourth and fifth characters shall be the last two digits in a production or importation year;
- (iii) The sixth and seventh characters shall be assigned by the Director and shall be uppercase alphabetical characters, or combined uppercase alphabetical and numerical characters, identifying the firearm model and caliber or gauge;
- (iv) The eighth through fourteenth characters shall be serialized numerals of the model that is produced or imported during a production or importation year.

The unique serial number may consist of not more than two lines, and the marking shall be readily legible and not smaller than 8-point Gothic without serifs. When the unique serial number appears on two lines, however, the first line shall consist of seven characters and the following seven characters shall appear not less than ½ millimeter from the first line.

(b) *Identification marks before*— [181 days after the final regulation is published in the **FEDERAL REGISTER**].

(1) Each licensed importer or licensed manufacturer of each firearm

imported or manufactured shall legibly identify—

- (i) Each firearm; and
 - (ii) Each firearm frame or receiver which is not a component part of a complete firearm at the time it is sold, shipped or otherwise disposed of by a licensed importer of licensed manufacturer.
- (2) Identification marks shall be engraved, cast, stamped (impressed), or otherwise conspicuously placed or caused to be engraved, cast, stamped (impressed), or placed on the firearm in a manner not susceptible of being readily obliterated, altered, or removed. The individual serial number shall be placed on the frame or receiver and other marks shall be placed on the frame, receiver or barrel of the firearm. Required identification marks are:

- (i) An individual serial number, not duplicating any serial number placed by the manufacturer or importer on any other firearm;
- (ii) The model, if a model designation has been made;
- (iii) The caliber or gauge;
- (iv) The name (or recognized abbreviation) of the manufacturer and also, when applicable, of the importer;
- (v) In the case of a domestically-manufactured firearm, the city and State (or recognized abbreviation of the State) where the licensed manufacturer maintains the place of business;
- (vi) In the case of an imported firearm, the name and country in which manufactured and the city and State (or recognized abbreviation of the State) of the importer; and
- (vii) Any other means of identification of the licensed manufacturer or licensed importer as authorized by the Director upon receipt of a letter application, in duplicate. The letter application shall show the identification is reasonable and will not hinder the effective administration of this part.

(c) *Destructive devices.* In the case of a destructive device, the Director may authorize other means of identifying that destructive device upon receipt of letter application, in duplicate, from the licensed importer, licensed dealer, or licensed manufacturer, showing that engraving, casting, or stamping (impressing) the destructive device would be dangerous or impracticable.

3. The center heading of Subpart H, preceding § 178.121, is amended to read as follows:

Subpart H—Records and Reports

§ 178.126a [Redesignated as § 178.129]

4. Section 178.126a is redesignated to § 178.129.

5. Section 178.128 is added to read as follows:

§ 178.128 Recording and reporting theft, loss, and recovery of firearms.

(a) *General.* Each licensee shall record and report the theft, loss, and recovery of a firearm, including frames or receivers, as required by this section.

(b) *Theft or loss.* Upon the discovery of a theft or loss of a firearm from a licensee's inventory, or upon notification that a firearm shipped by the licensee (cosignor) was stolen or lost prior to delivery to the consignee, a person responsible for the management of the licensed business shall:

(1) Within 24 hours, record all available information on ATF F 3310.8A, in accordance with the instructions on the form, including the circumstances surrounding the theft or loss; and report the information by calling the telephone number indicated on the form;

(2) Within 7 days, complete, sign under the penalties imposed by 18 U.S.C. 924 and 1001 and mail the pre-addressed original of the form, and retain the copy as part of the permanent firearms records; and

(3) Within 7 days, make the appropriate entry in the firearms acquisition and disposition record required to be maintained under this subpart.

(c) *Recovery of previously stolen or lost firearms.* If after reporting a firearm as stolen or lost the licensee recovers possession of the firearm, or discovers that the firearm was not actually stolen or lost, the licensee shall follow the procedures in paragraph b(1) through (3) of this section.

(d) *Effective date.* This section is effective on — [60 days after the final regulation is published in the FEDERAL REGISTER].

6. Section 178.130 is added to read as follows:

§ 178.130 Quarterly report of firearms manufacture.

(a) *Report.* Each licensed manufacturer of firearms, including frames or receivers, shall submit a quarterly report to the Director on ATF F 3300.11, showing the firearms manufactured by the licensee. A negative report on ATF F 5300.11 shall be submitted if there is no firearm manufactured during the quarter. The licensee shall:

(1) Prepare and submit the report, as instructed on the form, no later than 30 calendar days after the end of the 3-month reporting period. The report shall be signed under the penalties imposed by 18 U.S.C. 924 and 1001 by a person responsible for the management of the licensed business. A copy of the report shall be retained on the licensee's premises and shall be made available for inspection for 2 years following the date of preparation.

(2) Report all the information required by the form, unless other

instructions are issued in writing by the Director.

(3) Attach to the report a list of all firearms, manufactured during the 3-month reporting period showing for each, identification markings required by § 178.92.

(b) *Alternate reports.* Notwithstanding paragraph (a) of this section, the Director may authorize alternate reports submitted by a licensed manufacturer to report the firearms manufactured at the end of a 3-month reporting period when the licensed manufacturer shows that the alternate report will accurately and readily disclose the information required by paragraph (a) of this section. A licensed manufacturer who proposes to use an alternate report shall submit a letter application to the Director and shall describe the proposed alternate report and the need for it. The licensed manufacturer shall not employ the proposed alternate report until approval is received from the Director.

(c) *Effective date.* This section becomes effective on — [beginning of the next quarterly period following the publication of the final regulations in the FEDERAL REGISTER].

7. Section 178.131 is added to read as follows:

§ 178.131 Quarterly report of firearms disposition by licensed importers, licensed manufacturers, and licensed dealers.

(a) *Licensed importer.* Each licensed importer shall prepare and submit to the Director a quarterly report showing any disposition of firearms during the reporting period. If there is no disposition of firearms during the reporting period, a report showing no transactions during the reporting period shall be submitted to the Director. The quarterly report shall be prepared and submitted as prescribed by paragraph (d) of this section.

(b) *Licensed manufacturer.* Each licensed manufacturer shall prepare and submit to the Director a quarterly report showing disposition of firearms during the reporting period. If there is no disposition of firearms during the reporting period, a report showing no transactions during the reporting period shall be submitted to the Director. The quarterly report shall be prepared and submitted as prescribed in paragraph (d) of this section.

(c) *Licensed dealer.* Each licensed dealer shall prepare and submit to the Director a quarterly report showing disposition of firearms during the reporting period. If there is no disposition of firearms during the reporting period, a report showing no transactions during the reporting period shall be submitted to the Director. The quarterly report shall be prepared and submitted as prescribed in paragraph (d) of this section.

(d) *Preparation and submission of report.* Each licensee shall prepare a

report on ATF F 0000.00,¹ in duplicate and as instructed on the form, showing data on the description and disposition of the firearm and information about the mode of transportation to another licensee, including date transported, and name and address of the carrier. Dispositions to nonlicensees shall include the date of disposition and firearm description, but the report shall not contain the name and address of the nonlicensee. The report shall be signed by a person responsible for the management of the licensed business. The licensee shall prepare and submit the report, as instructed on the form, no later than 30 calendar days after the end of the 3-month reporting period. The report shall be signed under the penalties imposed by 18 U.S.C. 924 and 1001 by a person responsible for the management of the licensed business. A copy of the report shall be retained on the licensee's premises and shall be made available for inspection for 2 years following the date of preparation.

(e) *Alternate reports.* Notwithstanding paragraph (d) and, as applicable, paragraph (a), (b), or (c) of this section, the Director may authorize alternate reports submitted by a licensee to report firearms disposed of during a quarterly period when the licensee shows that the alternate report will accurately and readily disclose the information required by paragraph (d) of this section. A licensee who proposes to use an alternate report shall submit a letter application to the Director and shall describe the proposed alternate report and the need for it. The licensee shall not employ the proposed alternate report until approval is received from the Director.

(f) *Effective date.* This section becomes effective on — [the first day of the first month beginning not less than 180 days after the final regulation is published in the FEDERAL REGISTER].

PART 179—MACHINE GUNS, DESTRUCTIVE DEVICES, AND CERTAIN OTHER FIREARMS

8. Section 179.102 is revised to read as follows:

§ 179.102 Identification of firearms.

(a) *Unique serial numbers.* (1) After — [180 days after the final regulation is published in the FEDERAL REGISTER], each licensed importer or licensed manufacturer of each firearm imported or manufactured shall affix a unique serial number on—

- (i) Each firearm; and
- (ii) Each firearm frame or receiver which is not a component part of a

¹No number designation to date.



complete firearm at the time it is sold, shipped, or otherwise disposed of by a licensed importer or licensed manufacturer.

(2) The unique serial number shall be engraved, cast, stamped (impressed), or otherwise conspicuously placed or caused to be engraved, cast, stamped (impressed), or placed on the frame or receiver of a completed firearm in a manner not susceptible of being readily obliterated, altered, or removed.

However, the unique serial number shall be inconspicuously placed on the frame or receiver by licensed manufacturers or importers of frames or receivers which are to be sent to another licensed manufacturer. Additionally, a licensed manufacturer or importer of frames or receivers to be sent to another licensed manufacturer may omit the sixth and seventh characters of the unique serial number if a model and caliber or gauge is unknown.

(3) The unique serial number format on the frame or receiver of the firearm shall consist of 14 characters as follows:

(i) The first three characters shall be assigned by the Director and shall be uppercase alphabetical characters, or combined uppercase alphabetical and numerical characters, identifying the importer or manufacturer;

(ii) The fourth and fifth characters shall be the last two digits in a production or importation year;

(iii) The sixth and seventh characters shall be assigned by the Director and shall be uppercase alphabetical characters, or combined uppercase alphabetical and numerical characters, identifying the firearm model and caliber or gauge;

(iv) The eighth through fourteenth characters shall be serialized numerals of the model that is produced or imported during a production or importation year.

The unique serial number may consist of not more than two lines, and the marking shall be readily legible and not smaller than 8-point Gothic without serifs. When the unique serial number appears on two lines, however, the first line shall consist of seven characters and the following seven characters shall appear not less than 1/2 millimeter from the first line.

(b) *Identification marks before* _____ [181 Days after the final regulation is published in the FEDERAL REGISTER].

(1) Each licensed importer or licensed manufacturer of each firearm imported or manufactured shall legibly identify—

- (i) Each firearm; and
- (ii) Each firearm frame or receiver which is not a component part of a complete firearm at the time it is sold, shipped, or otherwise disposed of by a

licensed importer or licensed manufacturer.

(2) Identification marks shall be engraved, cast, stamped (impressed), or otherwise conspicuously placed or caused to be engraved, cast, stamped (impressed), or placed on the firearm in a manner not susceptible of being readily obliterated, altered, or removed. The individual serial number shall be placed on the frame or receiver, and other marks shall be placed on the frame, receiver, or barrel of the firearm. Required identification marks are:

(i) An individual serial number, not duplicating any serial number placed by the manufacturer or importer on any other firearm;

(ii) The model, if a model designation has been made;

(iii) The caliber or gauge;

(iv) The name (or recognized abbreviation) of the manufacturer and also, when applicable, of the importer;

(v) In the case of a domestically-manufactured firearm, the city and State (or recognized abbreviation of the State) where the licensed manufacturer maintains the place of business;

(vi) In the case of an imported firearm, the name and country in which manufactured and the city and State (or recognized abbreviation of the State) of the importer; and

(vii) Any other means of identification of the licensed manufacturer or licensed importer as authorized by the Director upon receipt of a letter application, in duplicate. The letter application shall show the identification is reasonable and will not hinder the effective administration of this part.

(c) *Destructive devices.* In the case of a destructive device, the Director may authorize other means of identifying that destructive device upon receipt of letter application, in duplicate, from the licensed importer, licensed dealer, or licensed manufacturer, showing that engraving, casting, or stamping (impressing) the destructive device would be dangerous or impracticable.

Signed: February 28, 1978.

REX D. DAVIS,
Director.

Approved: March 16, 1978.

RICHARD J. DAVIS,
Assistant Secretary of the
Treasury.

[FR Doc. 78-7303 Filed 3-16-78; 3:10 pm]

[4810-31]

[27 CFR Parts 47, 178, and 179]

[Notice No. 333]

FIREARMS REGULATIONS

AGENCY: Bureau of Alcohol, Tobacco and Firearms (ATF).

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice proposes that (1) importers and certain military members of the Armed Forces submit a revised form for authorization to import or bring firearms into the United States; (2) owners of certain National Firearms Act (NFA) firearms submit a form for authorization to transport their NFA firearms in interstate or foreign commerce; and (3) a Federal firearms licensee report by telephone information on firearms receipts and disposition when requested by ATF. This proposal would also allow dealers to return firearms for repair or replacement to their manufacturer or importer without having to obtain a copy of the manufacturer or importer's license, and that copies of licenses, when required, would be retained as part of the licensees' permanent records, enabling ATF officers to verify compliance with this proposed amendment. Additionally, miscellaneous, clarifying and editorial changes are proposed. The proposals would improve ATF's administration and enforcement of Federal firearms laws.

DATE: Comments must be submitted on or before May 22, 1978.

ADDRESS: Send comments, in duplicate, to: Director, Bureau of Alcohol, Tobacco and Firearms, Washington, D.C. 20226, Attention: Regulations and Procedures Division.

FOR FURTHER INFORMATION CONTACT:

J. A. Hunt or A. N. Stickney, Research and Regulations Branch, 202-566-7626.

SUPPLEMENTARY INFORMATION:

PROPOSED CHANGES

The sections under 27 CFR Parts 47, 178, and 179 with proposed changes are as follows:

IMPORTATION

Sections 47.42, 47.45, 178.112, 178.113, 178.114, 179.111, 179.112, 179.113, and 179.142 on the use of Forms 8—Part I, 8—Part II, and 6A for importations, would be amended.

The proposed importation regulations would require that a one-time importation of a stated amount of firearms, implements of war, and ammunition be made under a single authorization. Forms 8 and 6A would become one multi-use form: Proposed ATF F 7570.3. The proposed form would serve as (1) an application to import, (2) a permit, (3) a certification of release from customs custody, and (4) a verification of importation by all Federal firearms licensees. This proposed form would relieve Federal firearms licensees, military members of the U.S. Armed Forces, and U.S. Customs Ser-

ice and ATF personnel from preparing duplicate accounting information.

For military members of the U.S. Armed Forces, the requirement that report authorization be obtained for each firearm and ammunition imported was relaxed somewhat in 1969 by allowing, under specified conditions and for personal use, importation of not more than three rifles or shotguns and not more than 1,000 rounds of ammunition, excluding military surplus, without obtaining an approved Form 6 Revenue Ruling 69-309, 1969-1 C.B. 51 (Internal Revenue). Under the ruling, the military member or a duly authorized agent of the military member must furnish to the U.S. Customs officer releasing the firearms a certification on Form 6A attesting to the requirements for importation. The U.S. Customs official then certifies Form 6A and forwards the form along with the military member's certification to ATF.

Over the years ATF has found that handguns and surplus military firearms have been imported under the military exemption. Therefore, the Director intends to declare Revenue Ruling 69-309 obsolete. An authorization for each firearm and quantity of ammunition to be imported would be obtained by military members of the U.S. Armed Forces by using ATF F 570.3.

ATF has also found that handguns have been imported or brought into the United States by members of the U.S. Armed Forces to their place of residence without having obtained the required permit or other authorization required to possess or own a handgun in their State of residence. In order to assure that the importation is not in violation of applicable State laws, this proposal requires a U.S. military member, who is a resident of any State or territory which requires a permit or other authorization, submit evidence of compliance with State law.

Additionally, under current regulations a licensee, other than a licensed importer, may lawfully import on an occasional basis a sporting-type firearm (1) for personal use, or (2) on behalf of a nonlicensee without the necessity of an importer's license. However, the regulations do not expressly require on the importation application a statement as to the purpose of importation. The proposed regulation would require such statement of purpose and, in the case of an importation on behalf of a nonlicensee, the application must contain the nonlicensee's name and address.

TRANSPORTATION OF CERTAIN NATIONAL FIREARMS ACT (NFA) FIREARMS

1. *Section 178.28.* This section currently requires a person transporting any destructive device, machine gun, short-barreled shotgun, or short-bar-

reled rifle in interstate or foreign commerce to submit a written request to an approving official in order to obtain transport authority.

In lieu of a letter request, the Director proposes the required use of a form, ATF F 7560.8, Application to Transport Interstate or to Temporarily Export Certain National Firearms Act (NFA) Firearms. While current regulations specify the information that a letter request should contain, details relative to the transportation or exportation are often omitted from the letter. The form is designed to be useful to both the applicant and ATF by providing uniformity and ease in preparing and processing all pertinent information. This form would also ensure that a person transporting these National Firearms Act (NFA) firearms is in compliance with 18 U.S.C. 922(e) by meeting the written notice requirements to a contract or common carrier in delivering a firearm for transportation in interstate or foreign commerce. Finally, an approved copy of ATF F 7560.8 would remain in the possession of the carrier during the transportation of the NFA firearm and would provide the carrier proof of authorization for the movement of a NFA firearm, in compliance with 18 U.S.C. 922(f).

Additionally, a person transporting NFA firearms would be required to certify on ATF F 7560.8 that the interstate transportation or temporary export was completed and would forward the certified ATF F 7560.8 to the Director.

In revising § 178.28, it is further proposed that the following changes, in addition to some editorial changes, be made:

(1) Change the title to the section to read, "Transportation of Certain National Firearms Act (NFA) Firearms."

(2) Limit the use of an approved ATF F 7560.8 to a specified time period; otherwise, another application would be submitted and approved before further movement of a NFA firearm could begin.

(3) Since ATF F 7560.8 would contain all the essential information to account for the movement of NFA firearms in interstate and foreign commerce, it is proposed that the information required by subdivisions (1) through (7) of paragraph (a) be deleted from the section.

(4) The application, as proposed, would be submitted to the Director rather than to a regional office.

2. *Section 178.31.* Section 178.31 would be amended to require the use of ATF F 7560.8 as proposed in § 178.28, and to make editorial changes.

3. *Section 178.2.* Section 178.2 would be amended to cross-reference the transportation provisions of § 178.28.

LICENSE COPY BETWEEN LICENSEES

Section 178.94. At the present time, licensees selling or otherwise disposing of firearms or ammunition to other licensees are required by 27 CFR 178.94 to verify the identity and licensed status of the person receiving the firearm prior to making the transaction. Except under three circumstances, § 178.94 requires that the verification be established by having the person receiving the firearm furnish to the person transferring the firearm a certified copy of his or her license and by any other means as the person transferring the firearm thinks necessary.

As proposed, § 178.94 would provide a fourth exemption: that licensed manufacturers and licensed importers, whose name and address appear on an annual list published by ATF, need not furnish certified copies of their firearms licenses to other licensees from whom they receive firearms for the purpose of repair or replacement. Furthermore, § 178.94 would be amended to require that certified copies of licenses, as required, be maintained on the transferor's premises as part of the permanent records.

MISCELLANEOUS AMENDMENTS

Miscellaneous amendments, which would further conform the regulations to the proposed changes, are as follows:

1. Pub. L. 94-329, the Arms Export Control Act of 1976, repealed section 414 of the Mutual Security Act of 1954 although all determinations, authorizations, regulations, orders, contracts, agreements, and actions issued, undertaken, or entered into under section 414 of the Mutual Security Act of 1954 continue in full force and effect until modified, revoked, or superseded by appropriate authority. This law primarily controls the international traffic of arms into and from the United States. As a result, §§ 47.1, 47.2, 47.22, 47.44, 47.54, 178.2, 178.114, and the center heading preceding §§ 179.122, 179.122 and 179.193 would be amended to replace any reference to the "Mutual Security Act of 1954" with the "Arms Export Control Act of 1976". Section 47.57 would be amended to refer to the Arms Export Control Act of 1976. Since the Arms Export Control Act of 1976 increases the fine for violations to \$100,000, §§ 47.61 and 47.62 would be amended to reflect the statutory change.

2. The table of sections to Part 47 would be amended to reflect a center-heading change preceding § 47.41, a title change to § 47.63, and to supply an updated citation of authority. The table of sections to Part 178 would be amended to reflect a title change to §§ 178.28 and 178.114, as well as the center-heading change preceding § 178.121; and to supply and updated citation of authority. The table of sec-

AUTHORITY

Accordingly, under the authority contained in 18 U.S.C. 926, as amended (82 Stat. 1226) and in 22 U.S.C. 2778 (90 Stat. 744), the Director proposes to amend 27 CFR Parts 47, 178, and 179 as follows:

PART 47—IMPORTATION OF ARMS, AMMUNITION AND IMPLEMENTS OF WAR

1. The table of sections to 27 CFR Part 47 Subpart E is amended to read as follows:

Subpart E—Imports (Other Than Those Subject to Controls Under 27 CFR Parts 178 and 179

Sec.

47.63 Importing merchandise contrary to law; forfeiture.

AUTHORITY: Pub. L. 94-329, Section 38, 90 Stat. 744 (22 U.S.C. 2778), unless otherwise noted.

2. Section 47.1 is revised to read as follows:

§ 47.1 General.

The regulations in this part relate to that portion of section 38 of the Arms Export Control Act of 1976 (22 U.S.C. 2778) which is concerned with the importation of arms, ammunition, and implements of war. This part contains the U.S. Munitions Import List and includes procedural and administrative requirements and provisions relating to registration of importers, permits, articles in transit, import certification, delivery verification, import restrictions applicable to certain countries, exemptions, U.S. military firearms or ammunition, penalties, seizures, and forfeitures. All designations and changes in designations of articles subject to import control under section 38 of the Arms Export Control Act of 1976 have the concurrence of the Secretary of State and the Secretary of Defense.

3. Section 47.2 is amended by deleting the phrase "26 CFR * * *" wherever it appears and by replacing it with "27 CFR * * *". Furthermore, § 47.2(d) is amended to read as follows:

§ 47.2 Relation to other laws and regulations.

(d) Articles on the U.S. Munitions Import List imported for the United States or any State or political subdivision of the United States are exempt from the import controls of 27 CFR Part 178, but are not exempt from the Arms Export Control Act of 1976 unless imported by the United States or any agency of the United States. * * *

4. Section 47.11 is amended to read as follows:

§ 47.11 Meaning of terms.

ATF officer. An officer or employee of the Bureau of Alcohol, Tobacco and Firearms (ATF) authorized to perform any function relating to the administration or enforcement of this part.

Chemical agent. * * *

Customs officer. Any officer of the U.S. Customs Service or any commissioned, warrant, or petty officer of the Coast Guard, or any agent or other person authorized by law or designated by the Secretary of the Treasury to perform any duties of an officer of the U.S. Customs Service.

Machine gun. * * *

Permit. The term "permit" means the same as "license" for the purposes of 22 U.S.C. 2778.

Regional Director. Wherever used in this part shall mean a regional regulatory administrator as defined in this section.

Regional regulatory administrator. The principal ATF regional official responsible for administering regulations in this part.

5. Section 47.22 is revised to read as follows:

§ 47.22 Forgings, castings, and machine bodies.

Items in a partially completed state, such as forgings, castings, extrusions, and machined bodies of any of the articles enumerated on the Import List which have reached a stage in manufacture where they are clearly identifiable as arms, ammunition, and implements of war are considered to be articles for the purpose of section 38 of the Arms Export Control Act of 1976.

§ 47.34 [Amended]

6. Section 47.34 is amended in paragraph (a) by deleting the phrase "26 CFR * * *" where it appears and by replacing it with "27 CFR * * *".

7. The center heading of Subpart E is amended by deleting the phrase "26 CFR * * *" where it appears and by replacing it with "27 CFR * * *".

§ 47.41 [Amended]

8. Section 47.41 is amended in paragraphs (a), (c), and (d) by deleting the phrase "26 CFR * * *" wherever it appears and by replacing it with "27 CFR * * *".

PUBLIC PARTICIPATION

ATF requests comments from all interested persons. All comments received before the closing date will be carefully considered. Comments received after the closing date and too late for consideration will be treated as possible suggestions for future ATF action.

Copies of the proposed changes and of written comments are available for public inspection during normal business hours at the following location:

Public Reading Room, Room 4408, Federal Building, 12th and Pennsylvania Ave. NW., Washington, D.C.

Copies of the proposed forms may be requested from:

Regulations and Procedures Division, Bureau of Alcohol, Tobacco and Firearms, Washington, D.C. 20226.

Any interested person who desires an opportunity to comment orally at a public hearing on these proposed regulations should submit his or her request, in writing, to the Director within the 60-day comment period. The Director, however, reserves the right to determine, in the light of all circumstances, whether a public hearing should be held.

DRAFTING INFORMATION

Officials from the Bureau of Alcohol, Tobacco and Firearms and from the Treasury Department jointly participated in developing the proposals, both on matters of substance and style.

Section 47.42 is revised to read as follows:

42 Application for permit.

Persons required to obtain a permit provided in § 47.41 shall file with the Director ATF F 7570.3 (Form 6—t I), as instructed on the form and under the penalties imposed by U.S.C. 2778(c) and 18 U.S.C. 1001. approved ATF F 7570.3 will be returned to the applicant and shall serve the import permit.

D. Section 47.43(c) is amended to read as follows:

43 Terms of permit.

a)
b)
c) No amendments or alterations of previous entries may be made on the permit, except by the Director. No photographic or other copy of a permit may be used to effect release from customs custody, unless certified by the Director.

1. Section 47.44(a) is amended to read as follows:

44 Permit denial, revocation or suspension.

a) Import permits under this subpart may be denied, revoked, suspended or revised without prior notice whenever the Director finds the proposed importation to be inconsistent with the purpose or in violation of section 38 of the Arms Export Control Act of 1976 or the regulations in this part.

2. Section 47.45 is revised to read as follows:

45 Importation.

a) An importer who imported articles into the United States, subject to the import procedures of this subpart, may get the imported articles released from customs custody upon completing ATF F 7570.3 (Form 6A) as instructed on the form and upon furnishing the copies of the form to the customs officer releasing the articles. The Customs officer, after certifying ATF F 7570.3 (Form 6A), shall forward a copy of ATF F 7570.3 to the Director and return the others to the importer.

b) Within 15 days of the date of the articles' release from customs custody, the importer of the articles released shall forward to the Director a copy of ATF F 7570.3 (Form 6A) on which shall be reported any error of discrepancy appearing on the form certified by the U.S. Customs Service.

13. Section 47.54 is revised to read as follows:

47.54 Administrative procedures inapplicable.

The functions conferred under section 38 of the Arms Export Control

Act of 1976 are excluded from the operation of 5 U.S.C. Chapter 5, with respect to rulemaking and adjudications (5 U.S.C. 553, 554).

§ 47.56 [Amended]

14. Section 47.56 is amended in paragraph (a) by deleting the phrase "26 CFR . . ." where it appears and by replacing it with "27 CFR . . ."

15. Section 47.57(a) is amended in the first sentence by deleting the phrase "26 CFR . . ." where it appears and by replacing it with "27 CFR . . .". Furthermore, the last sentence in paragraph (a) is amended to read as follows:

§ 47.57 U.S. military firearms or ammunition.

(a) . . . This prohibition applies to military firearms and ammunition furnished on a grant basis to, or for which payment in full was not made by, a foreign government under the Lend-Lease Act of 1941, as amended; the Greek-Turkish Aid Act of 1947, as amended; the China Aid Act of 1948, as amended; the Mutual Defense Assistance Act of 1949, as amended; the Mutual Security Act of 1954, as amended; the Foreign Assistance Act of 1961, as amended; the Arms Export Control Act of 1967; or any other foreign assistance program of the United States.

§ 47.61 [Amended]

16. Section 47.61 is amended by deleting "\$25,000" where it appears and by replacing it with the maximum fine for violations of "\$100,000".

§ 47.62 [Amended]

17. Section 47.62 is amended by deleting "\$25,000" where it appears and by replacing it with the maximum fine for violations of "\$100,000".

18. Section 47.63 is revised to read as follows:

§ 47.63 Importing merchandise contrary to law; forfeiture.

Any person who fraudulently or knowingly:

(a) Imports or brings into the United States contrary to law any merchandise on the Import List; or

(b) Receives, conceals, buys, sells, or in any manner facilitates the transportation of merchandise that has been imported contrary to law—shall be fined not more than \$10,000 or imprisoned not more than 5 years or both; and the imported merchandise, or the value of the merchandise, shall be forfeited to the United States.

(18 U.S.C. 545.)

PART 178—COMMERCE IN FIREARMS AND AMMUNITION

1. The table of sections to 27 CFR Part 178 is amended to read as follows:

• • • • •
Subpart C—Administrative and Miscellaneous Provisions

Sec. 178.26 Transportation of certain National Firearms Act (NFA) firearms.

• • • • •
Subpart G—Importation

• • • • •
178.114 Importation by military members of the U.S. Armed Forces.

• • • • •
AUTHORITY: Pub. L. 591, 68A Stat. 917, as amended (26 U.S.C. 7805); Sec. 902, Title IV, Pub. L. 90-351, 82 Stat. 236, (18 U.S.C. Appendix); Sec. 102, Title I, Pub. L. 90-618, 82 Stat. 1214-1226, as amended (18 U.S.C. 921-928), unless otherwise noted.

2. Section 178.2 is revised to read as follows:

§ 178.2 Relation to other provisions of law.

The provisions in this part deal with commerce in firearms or ammunition and are in addition to, and are not in lieu of, any other provision of law or regulations. For regulations on traffic in machine guns, destructive devices, and certain other firearms, see § 178.28 and 27 CFR Part 179. For statutes on the registration and licensing of persons engaged in the business of manufacturing, importing, or exporting firearms, ammunition, or implements of war, see section 38 of the Arms Export Control Act of 1976 (22 U.S.C. 2778) and regulations at 27 CFR Part 47. For statutes on nonmailable firearms, see 18 U.S.C. 1715 and implementing regulations.

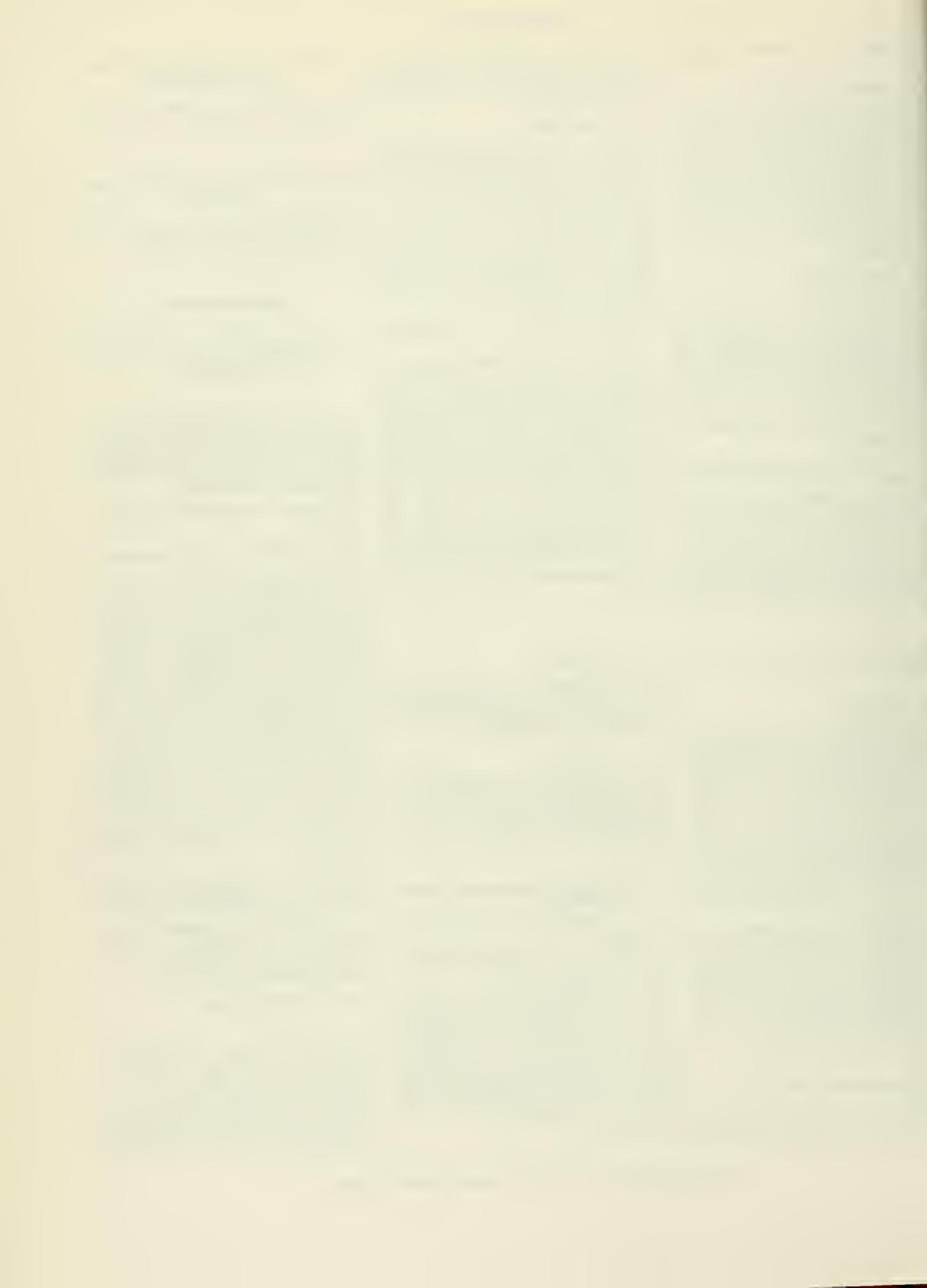
(Sec. 38, Pub. L. 94-329, 80 Stat. 774 (22 U.S.C. 2778); Sec. 5(j) (24), Pub. L. 91-375, 84 Stat. 779, as amended (18 U.S.C. 1715).)

3. Section 176.11 is amended by deleting the term "Regional Commissioner" where it appears; and is further amended to read as follows:

§ 178.11 Meaning of terms.

• • • • •
Assistant Regional Commissioner. Wherever used in this section shall mean a regional regulatory administrator as defined in this section.

ATF officer. An officer or employee of the Bureau of Alcohol, Tobacco and Firearms (ATF) authorized to perform



any function relating to the administration or enforcement of this part.

Commissioner. Wherever used in this part shall mean the Director as defined in this section.

Customs officer. Any officer of the U.S. Customs Service or any commissioned, warrant, or petty officer of the Coast Guard, or any agent or other person authorized by law or designated by the Secretary of the Treasury to perform any duties of an officer of the U.S. Customs Service.

Director. The Director, Bureau of Alcohol, Tobacco and Firearms, the Department of the Treasury, Washington, D.C. 20228.

National Firearms Act firearms or NFA firearms. Any firearm as defined in 27 CFR Part 179, Subpart B (26 U.S.C. 5845(a) through (g)).

Regional regulatory administrator. The principal ATF regional official responsible for administering regulations in this part.

Surplus military firearm. Any firearm that was acquired by a regular or irregular military force of a nation for the use of its soldiers, including any firearm originally manufactured for commercial use but which subsequently was acquired by the military force.

United States. The States, the District of Columbia, the Commonwealth of Puerto Rico, and the possessions of the United States (not including the Canal Zone), unless otherwise expressly defined.

4. Section 178.28 is revised to read as follows:

§ 178.28 Transportation of certain National Firearms Act firearms.

(a) A person desiring to transport in interstate or foreign commerce, or to temporarily export, destructive devices, machine guns, short-barreled shotguns, or short-barreled rifles shall apply on ATF F 7560.8, executed under the penalties of perjury and as instructed on the form, and shall receive approval from the Director before the proposed movement is made.

(b) The Director may approve a properly executed ATF F 7560.8 to

transport in interstate or foreign commerce certain NFA firearms if the Director determines that the transportation is reasonably necessary, consistent with public safety, and in conformance with State and local law. Upon approval or disapproval, the processed ATF F 7560.8 will be returned to the applicant.

(c) A copy of ATF F 7560.8 shall be furnished to the common or contract carrier performing the approved transportation in interstate or foreign commerce. The common or contract carrier shall retain the furnished copy of ATF F 7560.8 while transporting or shipping the designated firearm in order to meet the provisions of 18 U.S.C. 922(f) and 27 CFR 178.31(a).

(d) Authorization for the transportation of the firearm is limited to the specified dates and locations on ATF F 7560.8. If the firearm for any reason is not in transit during the authorized return period, the authorization is automatically revoked. Any further movement of the firearm would require another application.

(e) Within 7 days of completing an interstate transport or temporary export of a NFA firearm approved for movement, the person who received authorization shall certify on ATF F 7560.8 that the movement was completed on a given date and shall mail the certified copy of the form to the Director.

(f) If an approved ATF F 7560.8 expires before the firearm is transported in interstate or foreign commerce, or if the approved ATF F 7560.8 is unused or revoked before the expiration date, the person who received authorization on the approved ATF F 7560.8 shall mail it immediately to the Director.

(g) Authorization granted by this section does not carry or import relief from any other statutory or regulatory provision relating to firearms.

(h) A licensed manufacturer, licensed importer, or licensed dealer who is a special (occupational) taxpayer qualified under 26 U.S.C. 5801 need not obtain authorization from the Director to transport in interstate or foreign commerce firearms as specified by the special tax payment. A licensed collector qualified under 26 U.S.C. 5801 need not obtain authorization if the firearm to be transported is a curio or relic.

8. Section 178.31 is revised to read as follows:

§ 178.31 Transporting or shipping firearms and ammunition via common or contract carrier.

(a) Any person transporting or shipping by common or contract carrier any package containing a firearm or ammunition in interstate or foreign commerce to any person shall give written notice to the carrier unless the firearm or ammunition is to be sent to

a licensed importer, licensed manufacturer, licensed dealer or licensed collector.

(b) Any passenger who owns or legally possesses a firearm or ammunition being transported abroad any common or contract carrier for movement with the passenger in interstate or foreign commerce may deliver the firearm or ammunition into the custody of the pilot, captain, conductor or operator of the common or contract carrier for the duration of that trip without violating any provisions of this part.

(c) No common or contract carrier shall transport or deliver in interstate or foreign commerce any firearm or ammunition with knowledge or reasonable cause to believe that the shipment, transportation, or receipt of any firearm or ammunition would be in violation of this part. This paragraph, however, is not applicable to the transportation of firearms or ammunition in in-bond shipment under U.S. Customs Service laws and regulations.

§ 178.44 [Amended]

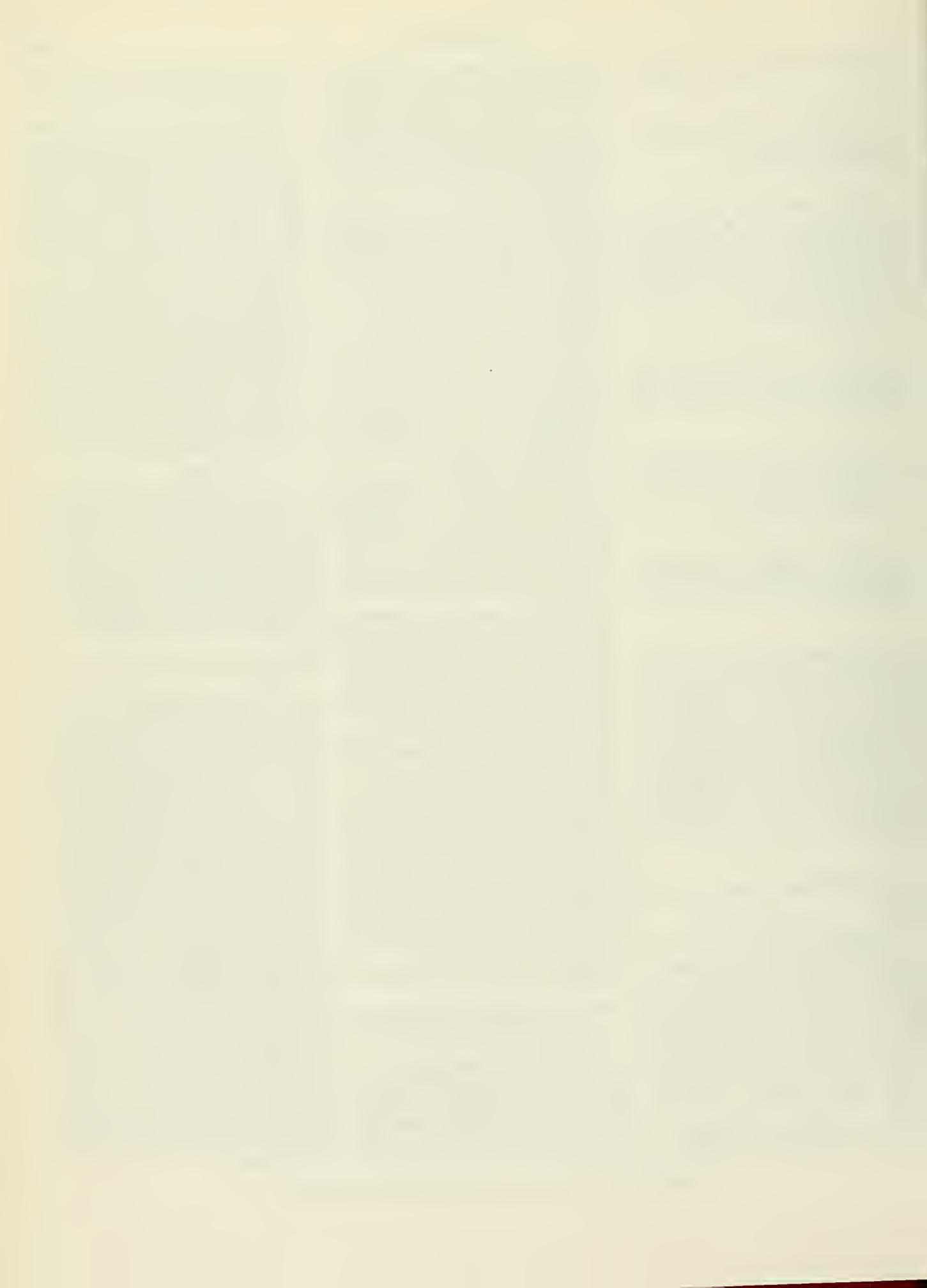
8. Section 178.44 is amended by changing the following sentence where it appears in paragraphs (a) and (b), "The application must be executed under the penalties of perjury and the penalties imposed by 18 U.S.C. 924.", to read as follows: "The application must be signed under the penalties imposed by 18 U.S.C. 924 and 1001".

7. Section 178.94 is revised to read as follows:

§ 178.94 Sales or deliveries between licensees.

(a) *General.* A licensed importer, licensed manufacturer, or licensed dealer (transferor) selling or otherwise disposing of firearms or ammunition, and a licensed collector (transferor) selling or otherwise disposing of curios or relics, to another licensee (transferee) shall verify the identity and licensed status of the transferee prior to making the transaction. Verification shall be established by the transferee furnishing to the transferor a certified copy of the transferee's license and by any other means as the transferor finds necessary. The certified copy of the license required by this section shall be maintained on the transferor's premises as a part of the permanent records required by Subpart H of this part. A transferor who has the certified information required by this section may sell or dispose of firearms or ammunition to a transferee for not more than 45 days following the expiration date of the transferee's license.

(b) *Exemptions from license copies.* (1) A transferee who has furnished a certified copy of his license to a transferor need not furnish another certified copy of his license to a transferor during the term of the transferee's current license.



2) Licensees of multilicensed business organizations need not furnish certified copies of their licenses to other licensed locations operated by that organization.

3) Multilicensed business organizations need not furnish certified copies of their licenses to a transferor if they furnish, in lieu of a certified copy of each license, a certified list containing the name, address, license number, and the expiration date of the license at each licensed location operated by that organization. A transferor may sell or otherwise dispose of firearms and ammunition as provided by this section to any licensee appearing on the list without requiring a certified copy of a license.

4) A licensed manufacturer or licensed importer need not furnish a certified copy of its license to another licensee if a firearm is being returned for the purpose of repair or replacement with a firearm of the same kind and type, and the licensed manufacturer or licensed importer's name appears on a list compiled by the Bureau and published annually.

8. Section 178.112 is revised to read as follows:

178.112 Importation by a licensed importer.

(a) *General.* A licensed importer (as defined in § 178.11) may import or bring into the United States a firearm or ammunition only (1) if the Director authorizes the importation of the firearm or ammunition, and (2) if the licensed importer complies with the requirements of this section.

(b) *Execution of permit application.* To import or bring a firearm or ammunition into the United States, a licensed importer shall file with the Director an application for a permit on ATF F 7570.3, Part I, (Form 6—Part I), as instructed on the form and signed under the penalties imposed by 18 U.S.C. 924 and 1001.

The licensed importer shall also furnish information establishing that the firearm or ammunition is:

(1) Being imported or brought in for scientific or research purposes;

(2) For use in connection with U.S. Army competition or training under 10 U.S.C. Chapter 401;

(3) An unserviceable firearm, other than a machine gun, imported or brought in as a curio or museum piece, including how the firearm was made unserviceable and why it is a curio or museum piece; or

(4) Generally recognized as particularly suitable or readily adaptable to sporting purposes, excluding surplus military firearms, and not covered by the definition of a firearm in 26 U.S.C. 5845(a). Approval of properly executed ATF F 7570.3 (Form 6—Part I) by the Director shall serve as the permit for a single importation of the firearm or

ammunition during the period of validity (usually 6 months) specified on the form. If the entire shipment cannot be completed as one importation, another application on ATF F 7570.3 (Form 6—Part I) shall be submitted to the Director for a permit to cover the unshipped balance. The new application may include firearms or ammunition in addition to the unshipped balance. If the Director disapproves ATF F 7570.3 (Form 6—Part I), he shall notify the licensed importer on the form of the basis for a disapproval.

(c) *Release from customs custody.* A firearm or ammunition imported or brought into the United States by a licensed importer may be released from customs custody to the licensed importer upon presenting to a Customs officer an approved ATF F 7570.3 (Form 6—Part I) from the Director for the importation of the firearm or ammunition to be released. In obtaining release from customs custody of an authorized firearm or ammunition, the licensed importer shall complete ATF F 7570.3, Part I (Form 6A), in triplicate, and shall furnish the forms to the Customs officer releasing the firearm or ammunition. The Customs officer shall certify Part III of ATF F 7570.3 (Form 6A), forward a copy to the Director, and return the other copies to the licensed importer.

(d) *Verification of importation.* Within 15 days of the date of release from customs custody, the licensed importer shall—

(1) Record on ATF F 7570.3 the identification required by § 178.92;

(2) Prepare Part IV of ATF F 7570.3 (Form 6A) as instructed on the form, and sign under the penalties imposed by 18 U.S.C. 924 and 1001;

(3) Forward to the Director a copy of ATF F 7570.3 (Form 6A) on which shall be reported any error or discrepancy appearing on Part I of ATF F 7570.3 (Form 6A) certified by the Customs officer; and

(4) Post all required information regarding the importation in the records required to be maintained by the licensed importer under Subpart H of this part.

9. Section 178.113 is revised to read as follows:

§ 178.113 Importation by other licensees.

(a) *General.* No person other than a licensed importer (as defined in § 178.11) shall engage in the business of importing firearms or ammunition. The Director, however, may permit a licensee, other than a licensed importer, to import or bring into the United States a firearm or ammunition under certain conditions, as required by paragraph (b) of this section.

(b) *Execution of permit application.* To import or bring a firearm or ammunition into the United States, a licens-

ee, other than a licensed importer, shall file with the Director an application for a permit on ATF F 7570.3 (Form 6—Part I), as instructed on the form and signed under the penalties imposed by 18 U.S.C. 924 and 1001. The licensee shall also furnish information establishing that the firearm or ammunition is:

(1) Being imported for the personal use of the licensee or on behalf of a nonlicensee (when the firearm is being imported for a nonlicensee, the name and address of the nonlicensee shall be stated);

(2) Being imported or brought in for scientific or research purposes;

(3) For use in connection with U.S. Army competition or training under 10 U.S.C. Chapter 401;

(4) An unserviceable firearm, other than a machine gun, imported or brought in as a curio or museum piece; or

(5) Generally recognized as particularly suitable or readily adaptable to sporting purposes, excluding surplus military firearms, and not covered by the definition of a firearm in 26 U.S.C. 5845(a).

Approval of a properly executed ATF F 7570.3 (Form 6—Part I) by the Director shall serve as the permit for a single importation of the firearm or ammunition during the period of validity (usually 6 months) specified on the form. If the entire shipment cannot be completed as one importation, another application on ATF F 7570.3 (Form 6—Part I) shall be submitted to the Director for a permit to cover the unshipped balance. The new application may include firearms or ammunition in addition to the unshipped balance. If the Director disapproves ATF F 7570.3 (Form 6—Part I), he shall notify the licensee on the form of the basis for disapproval.

(c) *Release from customs custody.* In obtaining release from customs custody, the licensee shall complete ATF F 7570.3 (Form 6A), as instructed on the form, and shall furnish the copies to the Customs officer releasing the firearm or ammunition. The Customs officer shall certify Part III of ATF F 7570.3 (Form 6A), forward a copy to the Director, and return the other copies to the licensee.

(d) *Verification of importation.*—(1) *Licensed manufacturer.* Within 7 days of the date of release from customs custody, the licensed manufacturer shall verify the importation as required in § 178.112 (d) (1) through (4) for licensed importers.

(2) *Licensed dealer or licensed collector.* The licensed dealer or licensed collector, within 2 business days of the date of release from customs custody, shall verify the importation as required in § 178.112(d) (2) through (4) for licensed importers.

10. Section 178.114 is revised to read as follows:

PROPOSED RULES

Department of the Treasury, Washington, D.C. 20226.

Regional regulatory administrator.
The principal ATF regional official responsible for administering regulations in this part.

§ 179.92 [Amended]

3. Section 179.92 is amended by replacing the term "any Assistant Regional Commissioner" with "the Director".

4. Section 179.111 is amended to read as follows:

§ 179.111 Procedure.

(a) *General.* * * *

(1) * * *

(2) * * *

(3) * * * The burden of proof that a firearm is being imported or brought in under paragraph (a) (1), (2), or (3) of this section shall be borne by any person importing or bringing the firearm into the United States or any territory under its control or jurisdiction.

(b) *Application.* Any person desiring to import or to bring a firearm into the United States under this section shall file with the Director an application on ATF F 7570.3 (Form 6—Part I), as instructed on the form and executed under the penalties of perjury, to permit the importation of firearms and ammunition. The application shall show the information required on the form and by Subpart G of Part 178 of this chapter. Attached to the application shall be a detailed explanation of why the importation of the firearm falls within the standards set out in paragraph (a) of this section. The person seeking to import or to bring in the firearm will be notified of the approval or of the disapproval of the application. If the application is approved, it will be stamped with a permit number and signed by the Director.

An approved ATF F 7570.3 (Form 6—Part I) shall be furnished to the Customs officer at the port of importation to effect release of the firearm from customs custody. The approved ATF F 7570.3 (Form 6—Part I) shall be automatically terminated at the expiration of 6 months from the date of approval or upon completion of a single importation within the period of validity, whichever occurs first. Upon request, the Director may extend the expiration date. If an approved application expires before the described firearm is imported, or if the approved application is unused, suspended, or revoked, the person responsible for the approved application shall return it immediately to the Director with a statement that it has not been used. The

person responsible for importing or bringing in a firearm not covered by an approved application may be subject to civil and criminal liabilities. (See 26 U.S.C. 5861, 5871, and 5872.)

(c) *Other requirements.* (1) Parts 47 and 178 of this chapter also contain requirements and procedures for the importation of firearms into the United States. A firearm may not be imported into the United States under this part unless those requirements and procedures are also complied with by the person importing the firearm.

(2) A person may return a firearm to the United States or any territory under the control or jurisdiction of the United States if he or she can establish to the satisfaction of the U.S. Customs Service that—

(i) The firearm was taken out of the United States or any territory under the control or jurisdiction of the United States by him or her;

(ii) The firearm is registered to him or her; and

(iii) If appropriate, the authorization required by 27 CFR 178.28 for the temporary exportation of the firearm in foreign commerce has been obtained by him or her.

5. Section 179.112 is revised to read as follows:

§ 179.112 Application procedure for registration of imported firearms.

(a) *Application.* Each importer shall prepare on Form 2 (Firearms), in duplicate, an accurate notice of firearms imported by him or her. The notice shall be executed under the penalties of perjury and shall set forth the following:

(1) The name and address of the importer;

(2) The special (occupational) tax stamp and the Federal firearms license identifications;

(3) The date of release from customs custody;

(4) The type, model, length of barrel, overall length, caliber, and gauge or size;

(5) Serial number;

(6) Other marks of identification of the firearm imported;

(7) The place where the imported firearm will be kept.

The importer shall file the original notice with the Director no later than fifteen (15) days from the date the firearm was released from customs custody. The copy of the notice shall be kept with the records required by Subpart I of this part at the premises covered by the importer's special (occupational) tax stamp.

(b) *Registration.* The timely receipt by the Director of Form 2 (Firearms), and of a copy of ATF F 7570.3 (Form 6A) required by § 178.112 of this part and covering the firearm reported on Form 2 (Firearms), shall effect the registration of the firearm to the importer.

(c) *Transfers.* The requirements of this part, relating to the transfer of a firearm, are also applicable to the transfer of the imported firearms.

8. Section 179.122 and the center-head preceding the section are revised to read as follows:

ARMS EXPORT CONTROL ACT

§ 179.122 Requirements.

(a) *Imports.* Persons engaged in the business of importing firearms are required by the Arms Export Control Act of 1976 (22 U.S.C. 2778) to register with the Director. (See 27 CFR Part 47.)

(b) *Exports.* Persons engaged in the business of exporting firearms caliber .22 or larger are subject to the requirements of a license issued by the Secretary of State. Applications for a license, prior to exporting firearms, shall be made to the Office of Munitions Control, Department of State, Washington, D.C. 20520.

(Sec. 38, Pub. L. 94-329, 90 Stat. 774 (22 U.S.C. 2778).)

7. Section 179.142 is revised to read as follows:

§ 179.142 Stolen, lost, or destroyed documents.

When any Forms 1, 2, 3, 4, 5, 10 (Firearms), ATF F 7560.8 and ATF F 7570.3 (Form 6A) which shows possession of a firearm, is stolen, lost, or destroyed, the person losing possession of the document shall immediately report to the Director the circumstances of the theft, loss, or destruction in detail. The report shall also include all known facts which identify the document. The Director will make an investigation, as appropriate, upon receipt of the report and may issue a duplicate document if circumstances warrant.

8. Section 179.193 is revised to read as follows:

§ 179.193 Arms Export Control Act.

See section 38 of the Arms Export Control Act of 1976 (22 U.S.C. 2778), and the regulations in 27 CFR Part 47, for provisions relating to the registration of persons engaged in the business of manufacturing, importing, or exporting arms, ammunition, or implements of war.

(Sec. 38, Pub. L. 94-329, 90 Stat. 774 (22 U.S.C. 2778).)

Signed: February 28, 1978.

REX D. DAVIS,
Director.

Approved: March 16, 1978.

RICHARD J. DAVIS,
Assistant Secretary
of the Treasury.

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BASEMENT

Date Due

DEC 5 '83
JAN 17 '84
NOV 13 1984
APR 11 1985
OCT 1 '85
APR 1 1986
APR 1 1987
APR 15 88
JAN. 28 1988

Lib-26-67

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MAR 4 1989

HD28.M414 no.994- 78
Van Breda, M. /A reconciliation of som
734902 D*BKS 00055087



HD28.M414 no.995- 78
/A possible design and e
734900 D*BKS 00055245



HD28.M414 no.996- 78
Tschoegl, Adri/International barter /
734898 D*BKS 00055090



HD28.M414 no.997- 78
Mason, Scott P/Risky debt, jump proces
735069 D*BKS 00057798



HD28.M414 no.998- 78
Kobrin, Stephe/Political risk :
745187 D*BKS 00143304



HD28.M414 no.999- 78
Holland, Danie/Trends in corporate pro
735081 D*BKS 00057788



