18 July 1968

CENTRAL INTELLIGENCE AGENCY

A. CENTRAL COMPUTER SERVICES

1. The Office of Computer Services has significantly increased its efficiency through the use of third generation equipment. Greater interest in computer support as well as greater processing capability was evidenced by a 200% increase in the monthly average of jobs submitted during this reporting period.

2. A third IBM 360/65, with 7090 emulation capability, was installed in December 1967. A second 360/20 was acquired to handle Input/Output functions and the conversion of selected EAM applications. A 360/40 was acquired in October 1967 for time-sharing experimentation and was released in March to another Agency component; the time-sharing work (both operation and experimental) was moved to a previously installed 360/50. Finally, an RCA Spectra 70/45 was installed in October 1967.

3. The direct access storage facilities of the major IBM systems was increased from 43 million to 224 million characters through conversion from model 2311 to model 2314 units.

4. Time-Sharing Software Developments. The Office of Computer Services implemented its internally developed time-sharing system in October 1967. The system presently provides the following programs:

a. TSAR - an improved version of the previously reported information storage and retrieval package called TORQUE

b. LINUS - a program for creation and editing of line oriented data sets

c. SOLVE - an incremental compiler for interactive mathematical computation

d. TRUMP - an updating facility for TSAR records

e. Development of teleprocessing modules to run under the time-sharing system in support of COINS.

f. CAI - a program for writing instructional materials for use in computer assisted instruction and for the access and exercise of these materials in a time-sharing environment.

5. Linear Programming Model. This project is aimed at the development of an econometric model of Soviet planning. During FY 68 the following tasks were completed.

a. Theoretical formulation of the model as a linear programming problem.

b. Programming of all data preparation procedures to generate the necessary input.

c. Completion of several trial runs to determine the validity of the model.

d. Completion of a revised formulation of the model.

e. Extension of the model to cover both 38- and 16-sector economies and a varible planning period from five to ten years.

6. Other Intelligence/Management Support Applications.

a. General capability - the CAPRI file management system (described last year) was near completion at the end of the fiscal year. Input processing, validation, file maintenance and output printing functions and the CAPRI Monitor were checked out. Retrieval was in the testing stage; the system will be available for operational testing in September.

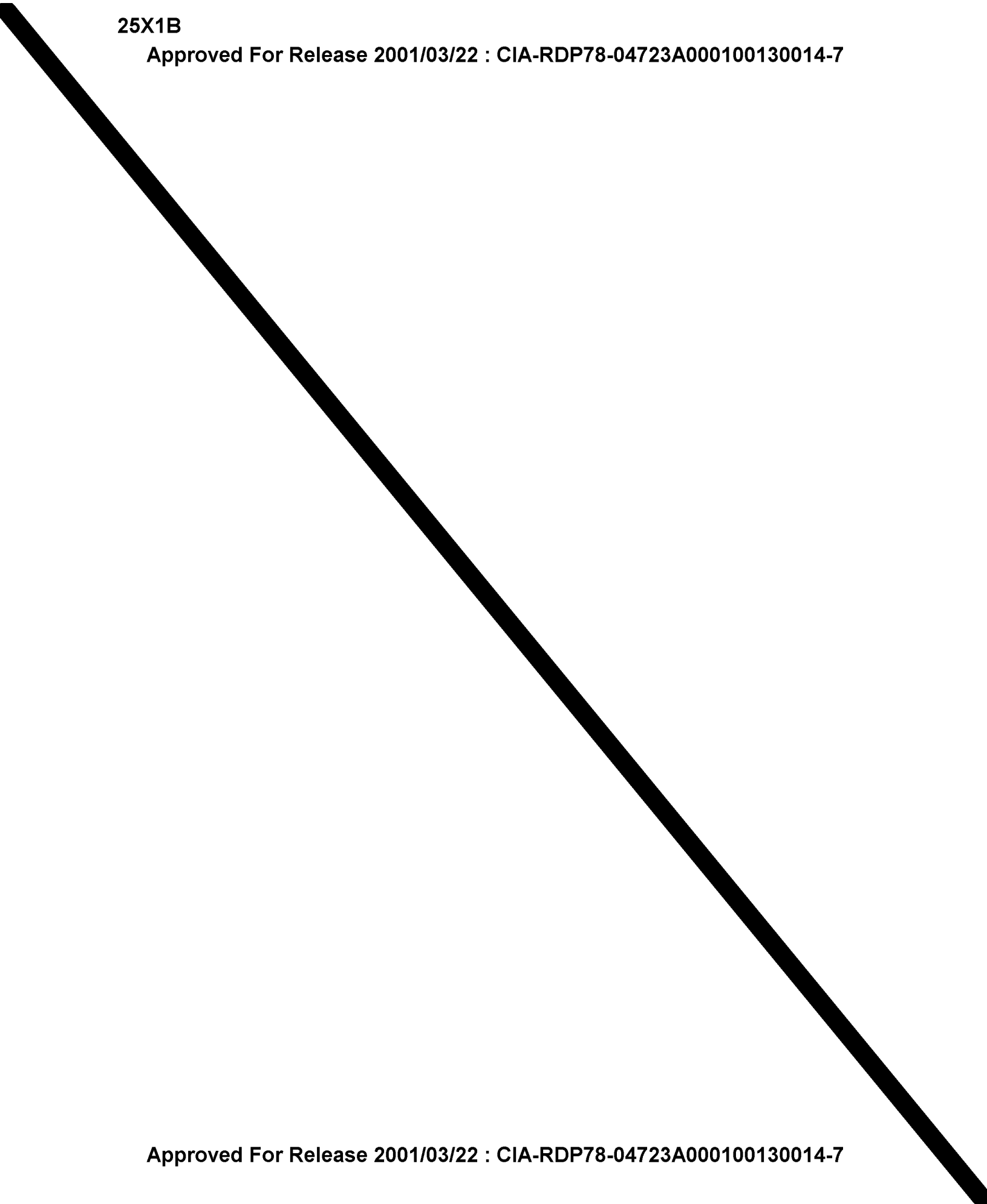
b. Target Oriented Display. Computer processing of data generated in the intelligence community -- for the TOD system was accomplished. Numerous reports were provided showing distribution of intelligence resources by geographic target areas and intelligence functions.

c. The Strategic (Foreign Military) Cost Analysis processing system was extended significantly by the addition of new modules for costing of nuclear weapons and for improving the generation of land armaments procurement data.

d. Current Intelligence Support - A system was developed for processing (mostly) textual material in the form of extracts marked by current intelligence analysts, with input preparation by their clerical personnel using Optical Character Reader forms. Retrieval on bibliographic items and/or combinations of topic themes, supplied by the analysts as part of the input process, is provided. This is a batch system, but experimentation with the time-sharing system is underway.

7. Scientific Data Processing Applications.

a. SADIE Software System - An operational version of the SADIE (Scientific Applications Division Intelligence Extraction) software system was implemented. This system is a flexible, multipurpose digital computer software system designed to facilitate the analog-to-digital conversion, analysis, and display of a wide variety of data customarily recorded in analog form on magnetic tape. The specific tasks performed by SADIE system include assistance in the configuration of the ANDI analog-to-digital converter hardware, initiation of digitization, preliminary display of resultant data, varied manipulation and analysis of these data, and selected displays of the analytical results. Particular attention has been directed toward expanding the analytical routines to include computation of Fourier transforms, auto-and cross-correlation functions, and digital filter convolutions.



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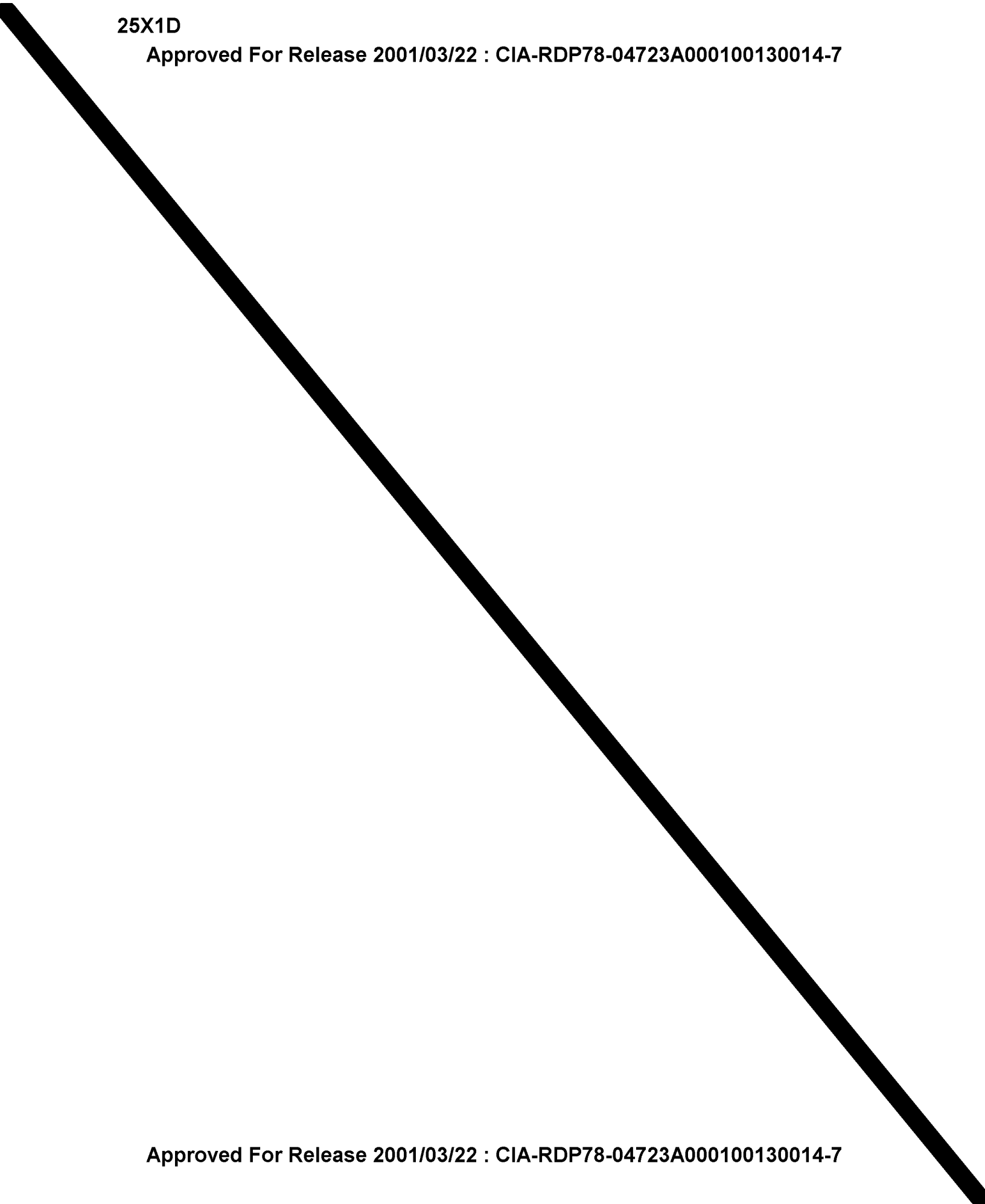
C. CENTRAL REFERENCE

1. The Central Reference Service (CRS) was reorganized during FY 1968 and now has two operating groups. The Information Services Group (ISG) is comprised of five all-source area divisions (USSR, Far East/Pacific, Europe, Near East/Africa, and Western Hemisphere)

and the CIA Library, and is concerned principally with the screening and indexing of intelligence materials, the answering of requests for reference or research support, and the preparation of finished biographic reports. The Support Services Group (SSG) is made-up of three functional divisions to handle the acquisition and dissemination of materials, the maintenance and servicing of document files, and procurement and maintenance of graphic materials, and the provision of automatic data processing services in support of the above reference activities. In the course of the reorganization, CRS ceased using the Intelligence Subject Code and adopted a simplified set of codes that are better suited to the current system of shallow indexing of all-source documents. The simplified code system is augmented by keywords extracted from documents. Several printed indexes to finished intelligence and special intelligence previously disseminated throughout the community have been discontinued.

2. Although manual files of biographic, installations, organization and ground/personality photographic materials continue to be an important part of the CRS reference activity, the shallow indexing system is underwritten by a digital computer system. Several special machine files for controlling information on personality travel and high-level Soviet personnel also have been adapted to computer processing. In anticipation of the increased information storage and retrieval workload, CRS's IBM 360/30 computer was upgraded in March 1968 to a 360/40 system.

3. CRS continued its participation in the COINS experiment and readied three of its automated files (Soviet Elite, Leader Appearance, and Bloc Travel) for internal operational use in the OCS Time Sharing System and for interagency access when the CIA computer is hooked into the COINS network in early FY 1969 through the switch at DIA.



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3. Phase III, the implementation of the systems design which requires the procurement of systems engineering and programming support to supplement the in-house capability, is currently under way. The programming required is estimated to exceed 700 man-months and involves 50 separate programs.

4. Phase IV, installation and testing, will be dovetailed with the Phase III work and is scheduled for completion by July 1970.

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4. The Agency undertook plans to acquire a 360/50 to replace the IPRD laboratory's 360/40 and test SDC's ADEPT system -- particularly to design, develop, experiment with and evaluate computer security procedures in an interactive operating environment.

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G. Automatic Dissemination

The Directorates of Science and Technology, and Intelligence were engaged in an extension of the automatic dissemination system developed for the Foreign Missile

and Space Analysis Center (FMSAC) to other organizations within these directorates. To develop a comparison of the effectiveness (precision and recall) of automatic dissemination with the established manual dissemination system, a structured test was established covering a limited number of disseminees with varying precision of vocabulary. The results of the test which will be published early in FY 1969 provide a number of interesting insights into both automatic and manual dissemination. This test program will be continued in concert with Agency participation in the USIB Content Control Code test during FY 1969.