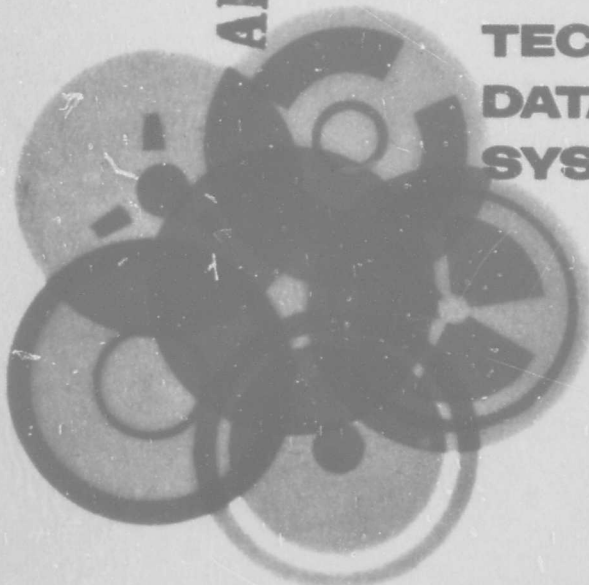


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INTEGRATED TECHNICAL DATA SYSTEM



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COMPUTER
SUBSYSTEM:

PERSONNEL POSITION
DESCRIPTIONS

JUNE 1969

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PREPARED FOR
U.S. ARMY MATERIEL COMMAND
CONTRACT NO. DA-49-186-AMC-324 (X)

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TRW
SYSTEMS GROUP

WASHINGTON OPERATIONS
1735 I STREET, N.W. • WASHINGTON, D.C. 20006

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FOREWORD

TRW Systems was awarded a contract [Contract Number DA-49-186-AMC -324 (X)] by the U.S. Army Materiel Command to develop an Integrated Technical Data System (ITDS). The ITDS is intended to assist the Army Systems Manager in performing his management and technical tasks by operating on relevant data to produce, summarize, and condense information. This allows the manager and technical support personnel to a) determine status and monitor technical progress, b) identify and predict system technical/management problems and their impact, c) comprehend and evaluate proposed system changes, and d) assign and maintain awareness of responsibility for action.

The ITDS is composed of personnel, procedures, equipment, and computer programs. The organization of these elements provides a capability for the processing of systems program data, including the following functions:

- Data receipt and indexing
- Validation and verification for authenticity
- Storage
- Manipulation
- Retrieval
- Display and dissemination.

The organization is divided into three major subsystems: the Functional Disciplines Subsystem, the Data Operations Subsystem, and the Computer Subsystem. ITDS user documentation, of which this manual is a part, is oriented to the above subsystems, with the exception of an overall System User's Guide and a Configuration Management Plan.

Following is a tabulation of ITDS user documentation (title of this volume is heavily underscored):

ITDS - Overall

- System User's Guide
- Configuration Management Plan

Functional Disciplines Subsystem

- Administrative Manual
- Operations Manual
- Personnel Position Descriptions

Data Operations Subsystem

- Administrative Manual
- Operations Manual
- Equipment Description
- Personnel Position Descriptions

Computer Subsystem

These 12 manuals, in general, cover administration of the subsystem, operating and maintenance instructions for the programs, computing equipment description, and personnel position descriptions.

- Administrative Manual
- Generalized Processing Program, General Description
- Applications Programs, General Description
- Peripheral Programs, General Description
- Computer Programs Maintenance Manual
- Computer Programs Operations Manual
- Data Processing Center Operator's Manual
- Equipment Description
- Personnel Position Descriptions
- Generalized Processing Program, Programming Documentation
- Applications Programs, Programming Documentation
- Peripheral Programs, Programming Documentation

This manual describes the personnel position descriptions for the Computer Subsystem.

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**COMPUTER SUBSYSTEM:
PERSONNEL POSITION DESCRIPTIONS**

1. INTRODUCTION

This document contains the approved descriptions of programming, production and operations personnel required to operate and maintain the Computer Subsystem of the Integrated Technical Data System (ITDS). These professional data processing personnel are an integral system capability and are assigned organizationally to the system. The computer subsystem personnel provide continuous data processing services for data handled by the generalized processing program, and scheduled periodic services for applications and peripheral programs.

1.1 PURPOSE

The purpose of this document is to specify the minimum personnel skills required to operate and maintain the dedicated Computer Subsystem within an ITDS. These personnel requirements are expressed in qualitative not quantitative terms. Each individual position description is presented separately on a standard format. Each description contains a cross reference to the appropriate function block on the "ITDS Summary Function Flow Chart" in the System Description, Part II: Product Description, in order to reflect the functional location of each position within the system.

1.2 SCOPE

This document identifies and describes only those personnel positions specified for the operation and maintenance of the Computer Subsystem in the System Description, Part II. The Computer Subsystem operations include the functions specified in paragraph 3.4 "Computer Subsystem." Personnel of this subsystem perform analysis and programming, production coordination and data processing center operations functions as outlined in brief below:

- a) Data processing center management
- b) Programs analyses
- c) Programming
- d) Computer operations
- e) Production coordination
- f) Scheduling and control

2. APPLICABLE DOCUMENTS

Specifications

| | |
|------------------|---|
| 06349-W510-RO-00 | System Description, Part II: Product Description for the Integrated Technical Data System, dated 7 March 1969 |
|------------------|---|

Manuals

| | |
|------------------|--|
| 06349-W518-RO-00 | Computer Subsystem: Computer Programs Operations Manual |
| 06349-W519-RO-00 | Computer Subsystem: Computer Programs Maintenance Manual |
| 06349-W520-RO-00 | Computer Subsystem: Data Processing Center Operations Manual |

3. PERSONNEL REQUIREMENTS

The personnel required for the Computer Subsystem are described in succeeding paragraphs. The position descriptions are presented in qualitative terms only, because the numbers of personnel required for the subsystem is dependent upon the nature, volume and complexity of the technical and management data being handled by the ITDS.

Each position description has been allocated an individual paragraph and page(s) as presented below:

- 3.1 DATA PROCESSING MANAGER
- 3.2 GENERALIZED SOFTWARE SYSTEMS ANALYST
- 3.3 APPLICATIONS SOFTWARE SYSTEMS ANALYST
- 3.4 PERIPHERAL SOFTWARE SYSTEMS ANALYST
- 3.5 GENERALIZED SOFTWARE COMPUTER PROGRAMMER
- 3.6 APPLICATIONS SOFTWARE COMPUTER PROGRAMMER
- 3.7 PERIPHERAL SOFTWARE COMPUTER PROGRAMMER
- 3.8 COMPUTER OPERATIONS SUPERVISOR
- 3.9 COMPUTER OPERATOR
- 3.10 KEYPUNCH SUPERVISOR
- 3.11 KEYPUNCH OPERATOR
- 3.12 SCHEDULING AND CONTROL SUPERVISOR
- 3.13 SCHEDULER
- 3.14 INPUT/OUTPUT CONTROL CLERK
- 3.15 DISK AND TAPE LIBRARIAN

3.1 POSITION DESCRIPTION: DATA PROCESSING MANAGER

POSITION TITLE:

Data Processing Manager

PRIMARY RESPONSIBILITY:

Establish and manage a medium-sized, multifunction data processing installation.

FUNCTIONS:

Analyze hardware requirements. Prepare specifications for hardware and software. Select machine configuration most suitable to departmental requirements. Prepare justification for proposed hardware and personnel budget. Prepare a physical plan for the computer installation to include:

- a. Physical layout.
- b. Preparation of site.
- c. Delivery schedule for the hardware.

Carry out the function of liaison between other computer organizations that are to interface with the computer facility.

Carry out liaison with all of the computer manufacturing industries.

Study new developments within the computer industry.

Keep abreast of new hardware and software configurations.

Recruit new personnel.

REQUIRED QUALIFICATION/SKILLS:

College degree or its equivalent in industrial engineering, electronics or mechanical engineering, mathematics, economics, statistics or business administration, plus 3 to 5 years as an ADP manager and 4 to 6 years as a programmer/analyst, with direct programming and/or systems analyst experience.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.2 POSITION DESCRIPTION: GENERALIZED SOFTWARE SYSTEMS ANALYST

| | |
|--|---------------------|
| POSITION TITLE: <p style="text-align: center;">Generalized Software Systems Analyst</p> | |
| PRIMARY RESPONSIBILITY: <p style="text-align: center;">Perform systems analysis for the purpose of establishing and identifying generalized software requirements.</p> | |
| FUNCTIONS: <p>Perform overall systems analysis and establish generalized software requirements. Write detailed system level specifications fulfilling each of the previously defined system requirements. Establish criteria for a program acceptance test and performance evaluation and construct program installation procedures.</p> <p>Participate in major conferences and meetings to resolve systems and program problems. Interface with the customer and the computer programmer in resolving generalized software systems problems.</p> | |
| REQUIRED QUALIFICATIONS/SKILLS: <p>College degree or its equivalent, plus three years of experience as a computer system analyst and three years of experience with direct programming.</p> | |
| REFERENCE FUNCTIONAL BLOCK: | |
| Prepared by: | Approved by: |
| Date: | Date: |

3.3 POSITION DESCRIPTION: APPLICATIONS SOFTWARE SYSTEMS ANALYST

| | |
|---|---------------------|
| POSITION TITLE: Applications Software Systems Analyst | |
| PRIMARY RESPONSIBILITY: Perform systems analysis for the purpose of establishing and identifying applications software requirements. | |
| FUNCTIONS: Perform overall systems analysis and establish applications software requirements. Write detailed system level specifications fulfilling each of the previously defined systems requirements. Establish criteria for program acceptance test and performance evaluation, and construct program installation procedures. Participate in major conferences and meetings to resolve systems and program problems. Interface with the customer and the computer programmer in resolving applications software systems problems. | |
| REQUIRED QUALIFICATIONS/SKILLS: College degree or its equivalent, plus three years of experience as a computer system analyst and three years of experience with direct programming. | |
| REFERENCE FUNCTIONAL BLOCK: | |
| Prepared by: | Approved by: |
| Date: | Date: |

3.4 POSITION DESCRIPTION: PERIPHERAL SOFTWARE SYSTEMS ANALYST

POSITION TITLE:

Peripheral Software Systems Analyst

PRIMARY RESPONSIBILITY:

Perform systems analysis for the purpose of establishing and identifying peripheral software requirements.

FUNCTIONS:

Perform overall systems analysis and establish peripheral software requirements. Write detailed system level specifications fulfilling each of the previously defined systems requirements. Establish criteria for program acceptance testing and performance evaluation, and construct program installation procedures.

Participate in major conferences and meetings to resolve systems and program problems. Interface with the customer and the computer programmer in resolving peripheral software systems problems.

REQUIRED QUALIFICATIONS/SKILLS:

College degree or its equivalent, plus three years of experience as a computer system analyst and three years of experience with direct programming.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.5 POSITION DESCRIPTION: GENERALIZED SOFTWARE COMPUTER PROGRAMMER

POSITION TITLE:

Generalized Software Computer Programmer

PRIMARY RESPONSIBILITY:

Assist in determining generalized software requirements and preparing generalized computer programs for EDP equipment. Prepare flow charts, develop and test program routines, and check validity of results.

FUNCTIONS:

Prepare general and/or detailed flow charts as necessary to determine generalized program requirements based upon data requirements established by the system analyst.

Code program from previously prepared flow charts.

Review programming routines for errors, perform computer tests, debug routines and check results to ensure all requirements have been met. Prepare test data for testing programs from record layout and information compiled by programmers.

Prepare program documentation. Assemble proper documents for program run books. Prepare systems charts.

Make logic changes to existing program, and test and debug as required.

Perform related duties as assigned.

REQUIRED QUALIFICATION/SKILLS:

College degree or its equivalent is preferred.

Five years experience as a computer programmer and thoroughly familiar with agency data processing equipment. Must be able to exercise ingenuity and originality in developing detailed program flow charts and translating application requirements into machine language instructions. Must be able to think logically and document work in a clear and concise manner.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.6 POSITION DESCRIPTION: APPLICATIONS SOFTWARE COMPUTER PROGRAMMER

POSITION TITLE:

Applications Software Computer Programmer

PRIMARY RESPONSIBILITY:

Assist in determining applications software requirements and preparing applications computer programs for EDP equipment. Prepare flow charts, develop and test program routines, and check validity of results.

FUNCTIONS:

Prepare general and/or detailed flow charts as necessary to determine applications program requirements based upon data requirements established by the system analyst.

Cost program for previously prepared flow charts.

Review programming routines for errors, perform computer tests, debug routines and check results to ensure all requirements have been met. Prepare test data for testing programs for record layout and information compiled by programmers.

Prepare program documentation. Assemble proper documents for program run books. Prepare systems charts.

Make logic changes to existing program, and test and debug as required.

Perform related duties as assigned.

REQUIRED QUALIFICATION/SKILLS:

College degree or its equivalent is preferred.

Five years experience as a computer programmer and thoroughly familiar with agency data processing equipment. Must be able to exercise ingenuity and originality in developing detailed program flow charts and translating application requirements into machine language instructions. Must be able to think logically and document work in a clear and concise manner.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.7 POSITION DESCRIPTION: PERIPHERAL SOFTWARE COMPUTER PROGRAMMER

| | |
|--|---------------------|
| POSITION TITLE: Peripheral Software Computer Programmer | |
| PRIMARY RESPONSIBILITY: Assist in determining peripheral software requirements and preparing peripheral computer programs for EAM and EDP equipment. Prepare flow charts, develop and test program routines, and check validity of results. | |
| FUNCTIONS: Prepare general and/or detailed flow charts as necessary to determine peripheral program requirements based upon data requirements established by the system analyst. Code program from previously prepared flow charts. Review programming routines for errors, perform computer tests, debug routines and check results to ensure all requirements have been met. Prepare test data for testing programs from record layout and information compiled by programmers. Prepare program documentation. Assemble proper documents for program run books. Prepare systems charts. Make logic changes to existing program, and test and debug as required. Perform related duties as assigned. | |
| REQUIRED QUALIFICATIONS/SKILLS: College degree or its equivalent is preferred. Five years experience as a computer programmer and thoroughly familiar with agency data processing equipment. Must be able to exercise ingenuity and originality in developing detailed program flow charts and translating application requirements into machine language instructions. Must be able to think logically and document work in a clear and concise manner. | |
| REFERENCE FUNCTIONAL BLOCK: | |
| Prepared by: | Approved by: |
| Date: | Date: |

3.8 POSITION DESCRIPTION: COMPUTER OPERATIONS SUPERVISOR

| | |
|--|---------------------|
| POSITION TITLE: <p style="text-align: center;">Computer Operations Supervisor</p> | |
| PRIMARY RESPONSIBILITY: <p>Organize the operations of the data processing computer center and supervise computer center and keypunch personnel.</p> | |
| FUNCTIONS: <p>Instruct senior console operators and other subordinates on operating practices, habits and hours of work, and adherence to controls and checks.</p> <p>Ensure that data can be most efficiently processed with minimum usage of staff and computer time by adequate documentation of all work performed.</p> <p>Organize the activities of and supervise personnel in the center.</p> <p>Plan, schedule, and direct production and issuance of timely reports to meet requirements of groups within the agency.</p> <p>Act as technical consultant to clients in input and output substance by suggesting formats, and to systems and procedures analysts by facilitating issuance of adequate reports.</p> | |
| REQUIRED QUALIFICATIONS/SKILLS: <p>High school education required; college degree preferred.</p> <p>Extensive experience in computer and tabulating operations, sufficient to yield practical knowledge of sound operational techniques and data processing standards and practices. Must also possess sound knowledge of computer procedures, flow charts, and machine instructions. Ability to organize, motivate, and supervise to obtain the most efficient utilization of personnel and mechanical resources.</p> | |
| REFERENCE FUNCTIONAL BLOCK: | |
| Prepared by: | Approved by: |
| Date: | Date: |

3.9 POSITION DESCRIPTION: COMPUTER OPERATOR

POSITION TITLE:

Computer Operator

PRIMARY RESPONSIBILITY:

Monitor and control an electronic computer to automatically process data.

FUNCTIONS:

Operate an electronic computer and associated peripheral equipment under general supervision.

Determine proper equipment setup from operating instructions.

Maintain machine performance and production records.

Maintain operating supplies, deliver completed jobs, and perform other task necessary to support machine processing activities.

REQUIRED QUALIFICATIONS/SKILLS:

High school education required; some college training preferred.

Three years experience as a computer operator. Competent in most phases to work unsupervised. Requires only general direction for the other phases.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.10 POSITION DESCRIPTION KEYPUNCH SUPERVISOR

| | |
|---|---------------------|
| POSITION TITLE: <p style="text-align: center;">Keypunch Supervisor</p> | |
| PRIMARY RESPONSIBILITY: <p style="text-align: center;">Supervise the keypunching and verifying of work and operate keypunch machine for recording of data.</p> | |
| FUNCTIONS: <p style="text-align: center;">Prepare production schedules for keypunching.</p> <p style="text-align: center;">Maintain keypunching schedules by assigning personnel and designating machine loading to maximize productivity.</p> <p style="text-align: center;">Initiate requests for changes in personnel complement, classification, or rates in keypunching.</p> <p style="text-align: center;">Conduct operations from written procedural instructions. Keypunch or verify approximately 75% of time qualification.</p> | |
| REQUIRED QUALIFICATIONS/SKILLS: <p style="text-align: center;">High school education. Four years experience in keypunching with some supervisory experience preferred.</p> | |
| REFERENCE FUNCTIONAL BLOCK: | |
| Prepared by: | Approved by: |
| Date: | Date: |

3.11 POSITION DESCRIPTION KEYPUNCH OPERATOR

| | |
|--|---------------------|
| POSITION TITLE: <p style="text-align: center;">Keypunch Operator</p> | |
| PRIMARY RESPONSIBILITY: <p style="text-align: center;">Operate keypunch and verify machine for recording data.</p> | |
| FUNCTIONS: <p style="text-align: center;">Keypunch and verify data processing cards under general supervision.</p> <p style="text-align: center;">Determine proper program card setup from an analysis of key-punch instructions.</p> <p style="text-align: center;">Perform related clerical tasks.</p> | |
| REQUIRED QUALIFICATIONS/SKILLS: <p style="text-align: center;">High school education. One year experience as a keypunch operator or successful completion of a keypunch training course with six months experience.</p> | |
| REFERENCE FUNCTIONAL BLOCK: | |
| Prepared by: | Approved by: |
| Date: | Date: |

3.12 POSITION DESCRIPTION: SCHEDULING AND CONTROL SUPERVISOR

POSITION TITLE:

Scheduling and Control Supervisor

PRIMARY RESPONSIBILITY:

Supervise the scheduling, control, library personnel for the Computer Subsystem.

FUNCTIONS:

Set up and interpret scheduling requirements for a data processing department. Supervise and instruct scheduler, data control, and library personnel in their assigned duties. Prepare and submit data processing production reports and input/output control reports to management. Analyze storage requirements for the disk and tape library and insure that proper security precautions are being taken to safeguard master and temporary data files.

REQUIRED QUALIFICATIONS/SKILLS:

High school education required; college degree preferred.

Supervisory experience and three to five years with data processing scheduling, data control, and tape library operations.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.13 POSITION DESCRIPTION: SCHEDULER

POSITION TITLE:

Scheduler

PRIMARY RESPONSIBILITY:

Schedule recurring and nonrecurring processing of data for the computer subsystem.

FUNCTIONS:

Analyze recurring and nonrecurring data processing requirements and establish schedule for data processing operations. Prepare production capabilities analysis for supervisor to present to management, and production reports on a periodic basis.

Coordinate with disk and tape librarian and input/output control clerk to insure that the proper master files and inputs are released to data processing operations for processing.

REQUIRED QUALIFICATIONS/SKILLS:

High school education required; college degree preferred.

Minimum one to three years scheduling experience and familiarity with data processing operations.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.14 POSITION DESCRIPTION: INPUT/OUTPUT CONTROL CLERK

POSITION TITLE:

Input/Output Control Clerk

PRIMARY RESPONSIBILITY:

Under supervision of immediate supervisor, implement and coordinate processing of diverse kinds of data in order that informational and control reports may be prepared.

FUNCTIONS:

Receive and review status changes, memoranda, and other system inputs. Verify accuracy of inputs by communication with various administrative personnel in line and staff groups.

Assume responsibility for distribution of all reports and other inputs and outputs from the data processing office.

Recommend design and implementation of special report formats and procedures.

REQUIRED QUALIFICATIONS/SKILLS:

High school education. Familiar with data processing concepts and procedures and problems and requirements of report users. Ability to coordinate and to successfully interact with administrative organizations.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.15 POSITION DESCRIPTION: DISK AND TAPE LIBRARIAN

| | |
|--|---------------------|
| POSITION TITLE: Disk and Tape Librarian | |
| PRIMARY RESPONSIBILITY: Maintain a disk and magnetic tape library. | |
| FUNCTIONS: Check in, assign classified log number, prepare receipts, and file magnetic tape and disks. File data and maintain records to provide ready access. Log test data provided to users. Process notices to be sent to overdue tape or disk holders. Prepare notification lists and process telephone requests. Prepare and forward outdated tape, disks, and material to records retention center. Establish procedures to preserve classified nature of data. | |
| REQUIRED QUALIFICATIONS/SKILLS: High school education with the ability to type, and familiarity with data filing system and data reduction terminology. | |
| REFERENCE FUNCTIONAL BLOCK: | |
| Prepared by: | Approved by: |
| Date: | Date: |