Division 6 - Lincoln Laboratory
Massachusetts Institute of Technology
Lexington 73, Massachusetts

SUBJECT: AN/FSQ-7 PROGRAMMING COURSE OUTLINE

To: Distribution List

From: Philip R. Bagley

Date: 20 July 1955

Approved: J. F. Jacobs

Abstract: A tentative outline is presented for the AN/FSQ-7
            Programming Course (18 July - 16 September 1955).

The outline below is a tentative outline of the topics in
the AN/FSQ-7 Programming Course. The course is being taught by IBM and
is under the supervision of Robert Lowe. The first session is being
given at the Lexington Field Station from 18 July through 16 September
1955. Class notes for the course are being published in a limited
quantity. Questions concerning the course or course notes should be
directed to Robert Lowe at the Lexington Field Station (extension 5418)
or to the writer, Room C-147, extension 5470.

AN/FSQ-7 PROGRAMMING COURSE OUTLINE

I. Introduction

    A. General Properties of Computers

    B. Basic Components of Electronic Computers

    C. Principal Applications

    D. Number Systems

II. FSQ-7 Computer Properties

    A. Introduction

        1. Purpose

        2. Logical Elements

III. Programming Techniques

    A. Symbolic Programming

        1. Advantages

        2. Form

        3. Use of Symbolic Addresses

        4. Symbolic Assembly Program

    B. Table Look-Up

    C. Sorting

    D. Subroutines

    E. Program Testing

    F. Programming Considerations Associated with Machine Errors and Checks

    G. Fundamentals of Scaling for Fixed Point Computing

IV. Input-Output Devices

    A. Punched Cards

        1. Method of Recording Data on Cards

        2. Method of Reading Cards

        3. Forms of Data Read Into FSQ-7

        4. Card Types for FSQ-7

    B. Card Reader

        1. Card Reader Ready

        2. Read Instruction

        3. Programmed End of File

        4. Buttons and Lights on Card Reader

        5. Manual Operation of Card Reader

        6. Card Reader Timing

C. Card Punch

    1. Program Control of Punching

    2. Special Program Control of Punching

    3. Card Punch Reader

    4. Buttons and Lights on Card Punch

    5. Manual Operation of Card Punch

    6. Card Punch Timing

D. Line Printer

    1. Programmed Operation of Printer

    2. Printer Ready

    3. Buttons and Lights on Printer

    4. Control Panel

    5. Carriage Control

    6. Sense and Operate

    7. Manual Operation

    8. Line Printer Timing

E. Magnetic Drum

    1. Operation

        a. Physical Description

        b. Terminology

    2. Uses of Magnetic Drums with the AN/FSQ-7

        a. As Auxiliary Storage

        b. As a Time Buffer

    3. Location of Information on the Drums

        a. Address Mode

        b. Interleaving

        c. Status Mode

F. Magnetic Tapes

    1. Physical Description and Checking

    2. Storage by Record and File and Use

    3. Machinery Bookkeeping for Preparedness, Readiness, Record and File

    4. Programming

V. Machine Checking and Maintenance

  A. Test Memory

    1. Purpose

    2. Physical Arrangement

    3. Control

  B. Maintenance Console

    1. Purpose

    2. Controls

  C. Manual Control at the Console

    1. Inserting Words into Core Storage

    2. Starting and Stopping Computer

    3. Displaying Contents of Selected Registers

  D. Sense Instruction

    1. Definition

    2. Description of Sense Units

    3. Parity Checking

Signed: _Philip R. Bagley_
Philip R. Bagley

PRB:ttf

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