SR25-5676-1
Course 10702

IBM

Field Engineering Education
Student Guide

3705 Emulation Program

PREFACE

This publication is primarily intended for use by IBM personnel enrolled in course 10702.

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CONTENTS

GENERAL INFORMATION

It should be understood that this document is a guide to provide the student with study guidance and the lab activities to be completed in this course. As it is a guide, it does not imply that the exact sequence contained herein will be adhered to. The exact sequence of presentations and lab assignments may be altered by the instructor if the need arises.

LEGEND

BCB	Bit Control Block
CA	Channel Adapter
CCB	Character Control Block
CCU	Central Control Unit
CS	Communications Scanner
ESC	Emulation Subchannel Mode
EP	Emulation Program
ICP	Interface Control Program
ICW	Interface Control Word
IPL	Initial Program Load
LCP	Line Control Program
LIB	Line Interface Base
NCP	Network Control Program
OLT	Online Test
PLM	Program Logic Manual
QCB	Queue Control Block
ROS	Read Only Storage
SRL	Systems Reference Library

COURSE DESCRIPTION

This course covers:

3704/3705 Emulation Program

Prerequisites

57066 3704/3705 Programming Support Introduction

BASIC SKILLS

1. Verify proper use or identify improper use of Emulation Program macros in a users 3704/3705 environment.

2. Verify and/or assist the customer in generating and installing the Emulation Program load module according to current guidelines for initial installation.

3. Read and interpret source and machine language code using the 3704/3705 Instruction Set.

4. Use the following Problem Determination Tools in localizing and/or isolating 3704/3705 Program Failures:

   - Customer/Operator Comments
   - Control Panel
   - System Console Messages
   - 3704/3705 Dump

5. Trace control and data flow for message processing in the following 3704/3705 Hardware and Emulation Program components:

   - Channel Adapters
   - Communication Scanners
   - Central Control Unit
   - Emulation Program Modules

6. Obtain and analyze required maintenance documentation to isolate TP network failures to:

   - Host Access Method
   - 3704/3705 Emulation Program Components
   - 3704/3705 Hardware Components

7. Prepare and submit necessary documents required to report, circumvent or correct all programming failures.

8. Generate a minimal configuration EP to be used in initial installation online testing.

The above are basic skills required to complete the task of servicing the 3704/3705 Emulation Program. See individual topics for the specific objectives to be learned in this course in order to support these basic skills.

MATERIAL REQUIRED

3704/3705 Emulation Reference Card	GR29-0296
3704/3705 Emulation Program Supplementary Course Material	SR23-3721
IBM 3704/3705 Communications Controller Emulation Program PLM	SY30-3001
IBM 3704/3705 Program Reference Handbook	GY30-3012
Intro to the IBM 3704/3705 Communications Controller - SRL - (Library Copy)	GA27-3051
IBM 3704/3705 Communications Controller Principles of Operation - SRL - (Library Copy)	GC30-3004
IBM 3704/3705 Communications Controller Assembler Language - SRL - (Library Copy)	GC30-3003
IBM 3704/3705 Communications Controller Operators Guide - SRL - (Library Copy)	GA27-3055
IBM 3704/3705 Communications Controller Emulation Program Generation and Utilities Guide and Reference Manual - SRL - (Library Copy)	GC30-3002
3705 EP Microfiche	JD2-4102
3705 OS SSP Microfiche	JD2-4100
3705 DOS SSP Microfiche	JD2-4101

OPEN-REVIEW-DATA FLOW

In the time allotted to this topic, the class will be opened and initial class administration will be handled, selected materials from the 3704/3705 Programming Support Introduction Course (57066) will be reviewed, introductory information and data flow pertaining to the 3704/3705 Emulation Program will also be presented.

OBJECTIVE

Upon completion of this topic, the student, using the available support documentation, should be able to:

1. Given a sample TP network, identify the 3704/3705 hardware components required to support the network operating in Emulation Mode.
2. List the 3704/3705 program components required to support an installation using Emulation Mode.
3. Given a data flow diagram, identify the components controlling the data flow in Emulation Mode and describe the purpose of each.
4. Given a data flow and its description, place the events in proper sequence.
5. Identify the two components of 3704/3705 code that run asynchronous to one another.

Activity

Review: Those areas of the 3704/3705 Principles of Operation and Introduction to the 3704/3705 covered in the 3704/3705 Programming Support Introduction course (57066).

Lecture: Complete the drawing below while the instructor describes the data flow in the 3704/3705 EP.

3704/3705 HARDWARE/SOFTWARE COMPONENT RELATION

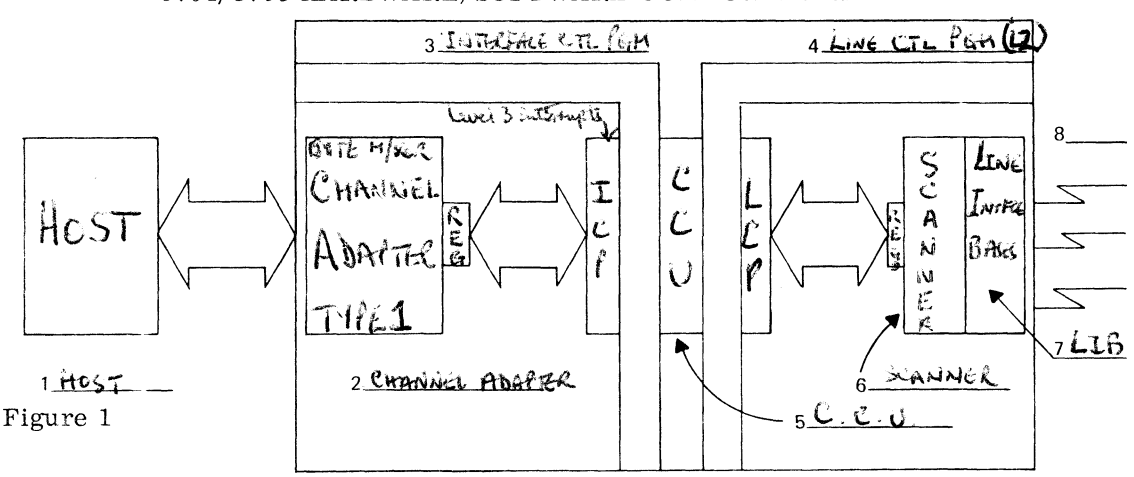


Figure 1

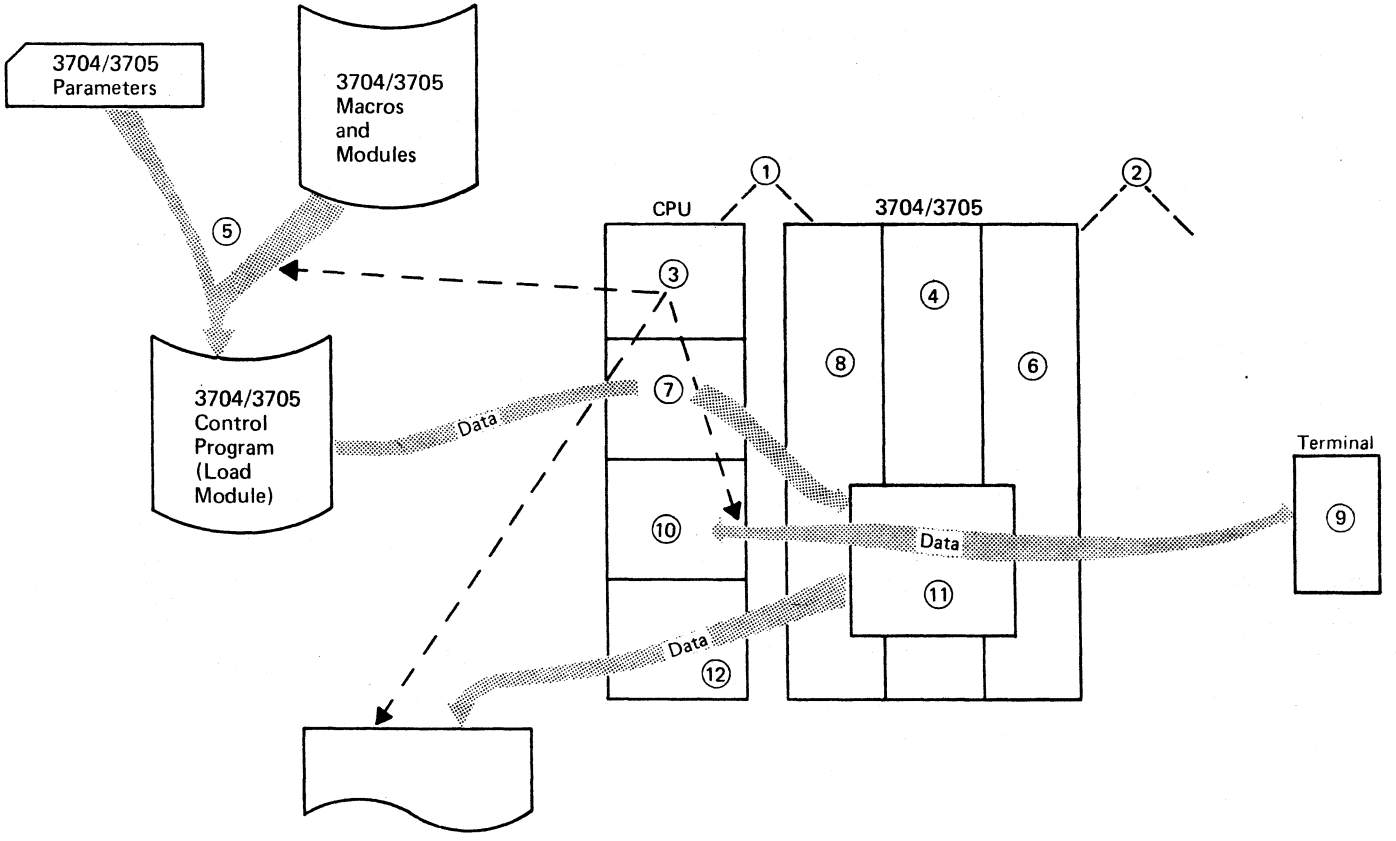


Figure 2 - 3704/3705 EP Component and Data Flow

SELF-EVALUATION QUESTIONS

1. Scanning the lines and servicing bits to/from the line is primarily accomplished by (hardware/programming) in the Type 2 Communication scanner. In the Type 1 Communication Scanner (line scanning/bit service) is performed by programming.

2. (True/False) The Type 2 Channel Adapter is supported in Emulation Mode.

3. List the four (4) programming components used to support the 3705 in Emulation Mode.

   a. Sysgen E.P Macros

   b. Load

   c. Dump

   d. Assembler

4. Match the list of 3704/3705 hardware and software components below to the area of the diagram which they most closely describe. In the box provided for component type, identify each component as:

   H - Hardware, S - SSP, C - 3704/3705 Control Program,
   P - Other program component(s)

   NOTE: Use drawing (Figure 2) for this question, "3704/3705 EP Component and Data Flow."

	COMPONENT No.	Type	
a.	5	S	3704/3705 Assembler and Sys Gen Procedure
b.	3	f	CPU Control - Operating System
c.	7	C	3704/3705 Loader Utility
d.	12	S	3704/3705 Dump Utility
e.	10	P	CPU Access Method
f.	1	H	Channel
g.	8	H	Channel Adapter
h.	4	H	Central Control Unit
j.	11	H	3704/3705 Core
k.	11	C	3704/3705 Control Program
l.	6	H	Communication Scanner
m.	2	H	TP lines
n.	9	H	Communication Terminal

5. In the list below (a) - indicate the proper sequence of events occurring during a transmit operation in the column labeled "S"; (b) - identify the event (in col "C") with the proper component(s) from the drawing in question 4. More than one answer is required for most answers in part (b).

	S	C	
a.	4	3, 11	The command is accepted by the 3704/3705
b.	7	4, 6	The data is prepared for transmission to the line.
c.	1	10	A transmit command and data is prepared for 3704/3705
d.	5	11, 4	The command is interpreted by the 3704/3705 and the proper transmission routines are requested.
e.	6	4, 11	The requested routine is executed.
f.	9	11, 2, 9	The data is passed to the proper destination.
g.	2	11, 8, 10, 4	Contact is made with the 3704/3705.
h.	8	6, 11	The data is presented to the line one bit at a time.
j.	3	1, 10	The command and data is passed to the 3704/3705.

6. Two components of the 3704/3705 code run asynchronous to one another. Select the correct answers from the list below:

a. Buffer Access
b. CCU
c. Channel Interface
d. Instruction Execution
e. Line Interface

Refer to the Contents for the location of the self-evaluation question answers.

SYSGEN PROCEDURES

The 3704/3705 Emulation Program macros for Stage 1 SYSGEN will be studied and then used with the assembler and an OS/DOS Linkage Editor to produce a 3704/3705 EP load module for loading and running in the 3704/3705.

OBJECTIVE

Upon completion of this topic, the student, using the available support documentation, should be able to:

1. Using the 3704/3705 EP macros, specify the correct macro sequence and macro parameters to build an Emulation Program.
2. Describe the installation procedures to include and catalog the Emulation Program macros and object modules in the operation system's data sets.
3. Write and/or verify JCL to load or dump the 3704/3705 using the 3704/3705 Loader and dump utilities.
4. Given the diagnostic aids and/or error indications state the corrective action, procedure or modification to be taken to correct errors during SYSGEN of the 3704/3705 EP.
5. Given a TP control unit's subchannel (line) addresses, equate those to the line addresses used with the 3704/3705 EP.

Activity

Read: 3704/3705 Principles of Operation
Chapter 1 - Introduction

3704/3705 EP System Generation and Utilities
Guide and Reference Manual
Chapter 1
Chapter 2
Chapter 3

Review: 3704/3705 Assembler SRL if required

Study: Appendix A in this manual

Lab: Complete Lab Project assigned by the instructor.

SELF-EVALUATION QUESTIONS

1. Arrange the following macros in the proper sequence for stage 1 SYSGEN of the 3704/3705 EP:

   4 a. LINE TERM = 1050
   6 b. LINE TERM = 2020
   7 c. GENEND
   5 d. GROUP LNCTL = BSC
   1 e. BUILD
   3 f. GROUP LNCTL = SS
   2 g. CSB

Refer to the Contents for the location of the self-evaluation question answers.

EP OVERVIEW AND SYSTEM LAYOUT (INCLUDES TRACE)

This topic will introduce the Emulation Program at a data flow level. In the data flow description, the various control blocks and queues will be described to illustrate the means by which the data flow is controlled.

The basic queue management routine used to control the data movement on the queue will be discussed and the modules that use the queue management routine will be introduced.

A discussion of the trace facility will be presented to provide an introduction to the problem solving tools and techniques available.

OBJECTIVE

Upon completion of this topic, the student, using the available support documentation, should be able to:

1. List the four major program components that comprise the Emulation Program.
2. List the queues associated with the Emulation Program components and identify their function.
3. Match the control blocks/tables used by the Emulation Program with their proper definition.
4. Given a dump of the Emulation Program, locate the control blocks/tables and queues and state when they were allocated and initiated.
5. Determine, from the queues and control blocks of a dump, the status or condition of specified portions of the 3704/3705 at the time the dump was taken.
6. State the method used to include and activate the programming trace facility.
7. State what is traced in CYATRACE by selecting from a list the items contained in the trace table for either a L2 or L3 entry.

Activity

Read: 3704/3705 Emulation Program PLM
- Introduction
- Method of Operation

Review: 3704/3705 Introduction SRL for data concepts

Study: The data flow chart in the supplementary materials section Appendix B,

Lab: Complete Lab Project assigned by instructor.

SELF-EVALUATION QUESTIONS

1. The three major components of the Emulation Program are:

   a. _____

   b. _____

   c. _____

2. Listed below are the functions of the EP queues. Provide the name of the queue and the EP component(s) with which the queue is associated:

   a. Sense information is passed to the channel from CCB's and placed on the _____ queue by the _____.

   b. Data from a terminal is represented by a CCB placed on the _____ queue by the _____.

   c. Status is queued by placing the CCB on the _____ queue or the _____ queue.

   d. When the Type 1 communication scanner is installed the BCB is placed on the _____ queue when all bits for a character have been received.

   e. Data being passed to the terminal is represented by a CCB placed on the _____ queue by the _____.

3. (True/False) The Queue Management Routine is entered via a branch and link from either ICP or LCP routines to queue or dequeue a CCB on a specific queue in the queue control block.

4. Given the list of control blocks/tables in Col A, match them to their function in Col B.

Col. A		Col. B	
a.	CCB _____	1.	Used by the type 1 scanner to present bit service information.
b.	ICW _____	2.	Represents the beginning and ending pointers of a chain of control blocks.
c.	BCB _____	3.	Contains the data xferred to/from the channel and line.
d.	QCB _____	4.	Contains half word addresses of CCB for the lines selected.
e.	Character Service QUE _____	5.	Contains the BCB that needs character service.
f.	CYACHVT _____	6.	Used by the type 2 scanner to contain the character being sent to/from a line.

5. Circle the interrupt request items below that will be traced by the CYATRACE Facility.

   a. Level 1 Program Check
   b. Level 2 Character Service Request
   c. Level 4 Interrupts
   d. Level 3 Initial Selection
   e. Level 3 Data Service

6. Given the following list of 3705 information, select those items which will appear in a CYATRACE entry for a line interrupt.

   a. CCBL2 field
   b. Register 62 contents
   c. SCF, SDF information
   d. CCB address
   e. Data buffers
   f. Status/Sense

7. a. Which SYSGEN macro and operand is used to include the tracing facility?

   _____ macro

   _____ operand

   b. State how you would activate the tracing facility for subchannels 022 through 025.

   _____

   _____

IPL AND CONTROL PANEL

The 3704/3705 control panel functions and operation will be covered in this topic.

OBJECTIVE

Upon completion of this topic, the student, using the available support documentation should be able to:

1. Given error codes, messages, or stated conditions, use the 3704 and 3705 control panel to:
   a. Obtain additional information.
   b. Bring up and IPL the Emulation Program.
   c. Display pertinent registers and data areas.
   d. Alter code in storage.

Activity

Read: 3704/3705 Principles of Operation
Chapter 10 - Control Panel

Study: 3704/3705 EP Operators Guide

Review: 3704/3705 Principles of Operation
Chapter 1 - IPL
Chapter 5 - CCU Operations

Lab: Complete the Lab Project assigned by the instructor.

A lab project will be assigned at the end of this session. Your instructor will assign the lab groups for hands-on. While other teams are exercising the 3704/3705 utilize the time finishing any other projects or assignments you have outstanding.

SELF-EVALUATION QUESTIONS

1. Below is a list of CCU registers. Draw a line through those registers that cannot be manually displayed on the control panel.

   a. A-reg
   b. B-reg
   c. External registers
   d. General registers
   e. LAR
   f. Op reg
   g. SAR
   h. SDR
   j. TAR
   k. Z-reg

Refer to the Contents for the location of the self-evaluation question answers.

LEVEL 1 FUNCTIONS

Abnormal and error conditions occurring in the 3704/3705 will create a Level 1 interrupt. The function of the Level 1 code is to assess the damage and take corrective action when possible. If the error cannot be recovered from, the CCU will issue a message, drop the line or hard stop.

The Level 1 error conditions and the action taken will be presented in this topic. Included are the Level 1 interrupt handler and the Level 1 logic.

NOTE: The Level 1 conditions are not to be confused with the ERP provided in the access method.

OBJECTIVE

Upon completion of this topic, the student, using the available support documentation, should be able to:

1. Describe the error conditions which will cause Level 1 interruptions on errors.
2. List the types of errors which will require RE-IPL after logging of the specific error.
3. State the logic flow used by the level 1 interrupt handler and code in processing a permanent or recoverable error.
4. State where the halfword log message table is located in core and how it is organized.
5. Indicate what is included in the halfword log message by completing a diagram of the bytes in the core message table.

Activity

Read: 3704/3705 EP PLM Diagnostic Aids p. 4-7

Review: 3704/3705 EP PLM Introduction

SELF-EVALUATION QUESTIONS

1. The Level 1 router will reset the Level 1 interrupt request and exit Level 1 on _____ error condition.

2. List the error types which require IPL after the error.

   a. _____

   b. _____

   c. _____

3. Four error types which cause a Type 1 CA check are:

   a. _____

   b. _____

   c. _____

   d. _____

4. Which of the following is not an error condition that will cause a Level 1 interrupt.

   a. Address compare interrupt error
   b. CCU check
   c. Address exception
   d. Scanner - line data check

5. (True/False) The communication scanner check causes a RE-IPL condition if a scanner has a permanent scanner check.

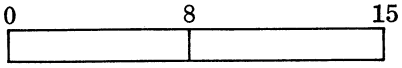
6. Listed below is the basic logic flow of the Level 1 error routines. Put them in proper sequence as they would occur in handling an error:

   a. Save Level 2 registers _____
   b. Call the routine that will handle this error type _____
   c. Determine if recoverable _____
   d. Determine error type _____
   e. Attempt recovery _____
   f. Log error condition _____
   g. Exit _____

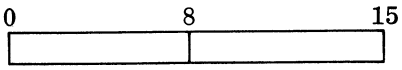
7. The Halfword Log Message Table begins in core at fixed address X '_____'. The first halfword contains _____.

8. Indicate what is included in the halfword log message by completing the diagrams below:

a. Condition - Program check or CA check



b. Condition - Scanner check



INTERFACE CONTROL PROGRAM

The interface control program's function is to provide an interface between level 2 code and the type 1 CA. Channel commands are interrogated and initial channel status is determined as good before initial line contact is made. When this validation is completed by the ICP, the appropriate LCP module for the line activity required is selected and control is passed to it by a L2 interrupt. Control and data information are passed between the ICP and LCP via the Character Control Block (CCB) by using proper queues. This session will introduce the ICP components modules (routines) and the data flow through these routines.

OBJECTIVE

Upon completion of this topic the student, using the available support documentation, should be able to:

1. Given 3704/3705 dumps, determine the logic flow of the ICP by isolating failures in the ICP routines and the 63 interrupt handler.
2. Identify the interrupt types used by the TYPE 1 CA or the Line Control Program to pass control to the ICP.
3. Trace the data flow of a read or write operation through the ICP for intial selection and data/status transfer.

Activity

Read: 3704/3705 EP PLM
Method of Operation, Functions of the Interface Control Program.

Study: 3704/3705 EP PLM Method of Operation Charts:
A1.0 - A1.9
A2.1 - A2.11
C
A3

Review: Appendix B - Emulation Program Data Flowchart

Lab: T/A Problems will be assigned by the instructor.

SELF-EVALUATION QUESTIONS

1. The LCP will pass control to the ICP when it has a full buffer for the channel by a _____ request.

2. Place in the proper order, the steps required during processing of data from the Type 1 CA to the LCP.

a.	Level 2 interrupt	_____
b.	ICP Starts CA	_____
c.	Data is inputted from the CA to the CCB.	_____
d.	The ICP determines a data transfer.	_____
e.	Level 3 interrupt is requested by the CA.	_____
f.	CA gets data from the channel.	_____
g.	Queue scan gets CCB from DSIQ.	_____
h.	Load the Level 2 routine in the CCBL2 field.	_____
		_____

3. On an Initial Selection sequence the ICP _____ routine gets control, determines request, and passes control to a - _____ _____ module to process the initial selection command.

4. The CA can interrupt the ICP whenever _____ or _____ is detected by the CA hardware.

5. The CCU can make a _____ interrupt request for L3 on a timeout condition.

6. When the ICP is interrupted by the LCP making a PI request the _____ _____ routine is given control by the L3 interrupt handler.

LINE CONTROL PROGRAM - TYPE 2 SCANNER

The Type 2 CS program support consists of only character service routines. These routines function by passing characters via the Interface Control Word (ICW) to the Scanner for transmission or accepting characters from the Scanner via the ICW when receiving. The Type 2 Scanner hardware provides the actual interface functions between the ICW and the line.

Once a command is processed and the LCP gains control, the LCP device dependent routines for handling the character being passed to/from the line are executed. Both bi-sync and start/stop characters are handled and depending on line dependencies, proper character control is added before the character is processed by the hardware.

OBJECTIVE

Upon completion of this topic, the student, using the available support documentation, should be able to:

1. Given a dump, trace the logic flow of a LCP Type 2 character service routine by isolating and correcting program errors.
2. Given specific line operations, define the functions which must be provided by a bi-sync or a start/stop LCP routine.
3. Match the name of the appropriate ICW and CCB fields with the function as used by the LCP for character service.

Activity

Read: 3704/3705 EP PLM
Introduction
Method of Operation

Study: 3704/3705 EP PLM - Method of Operation Charts
B
B4 - B17

Lab: T/A Problems will be assigned by the instructor.

SELF-EVALUATION QUESTIONS

1. Match the function in Column B with the appropriate ICW or CCB field in Column A.

Column A		Column B
_____ a.	CCBL2	1. Accumulated LRC character.
_____ b.	ICW SDF	2. Defines the line interface state.
_____ c.	ICW PCF	3. Field containing next L2 routine to get control for handling the CCB.
_____ d.	CCBTBLAD	
_____ e.	ICWPDF	4. Character serializer/deserializer field.
_____ f.	CCBLRC	5. Used as a character buffer.
_____ g.	CCBTMADR	6. Translate table address.
		7. Defines the line interface type.
		8. Timer routine address.

2. The start/stop routine for a XMIT INITIAL does not have to perform which of the following:

   a. Initialize the ICW for transmission of PAD characters.
   b. Initiate the line enabling process.
   c. Monitor for a control character (C) , (D) , (B) .
   d. Schedule service request for the first four bytes of data.

3. The bi-sync routine for a REC DATA Sequence must do which of the following: (May be more than one correct answer.)

   a. Set the CCBL2 for REC PHASE.
   b. Move the character from the ICW to the data buffer.
   c. Recognize two consecutive SYN characters.
   d. Update the BCC accumulation.
   e. Set status and sense bytes if BCC doesn't compare.
   f. Place EOB character in the data buffer.

LINE CONTROL PROGRAM - TYPE 1 SCANNER

This session will introduce the responsibilities of the program required to support the Type 1 CS.

The Type 1 Scanner is primarily program dependent in that no character or bit service is accomplished by hardware. There are two sections to the Type 1 LCP Scanner support. Character service which is basically the same as that for the Type 2 scanner and bit service which provides the line interface capability that is done via hardware in the Type 2 scanners.

OBJECTIVE

Upon completion of this topic the student, using the available support documentation, should be able to:

1. Given a dump, trace the logic flow in the Type 1 Scanner LCP character service or bit service routines by isolating and correcting program errors.
2. Match the name of the appropriate BCB and CCB fields with the function they perform in the Type 1 LCP character service or bit service routines.
3. State the basic operations that must be completed by a bit service routine to transmit or receive a character to/from a specific line.

Activity

Read: 3704/3705 EP PLM
Method of Operation

Review: 3704/3705 Principles of Operation
Chapter 6

Study: 3704/3705 EP PLM
Method of Operation Charts:
Type 1 L2 routines for S/S and Bi-Sync

Lab: T/A Problems will be assigned by the instructor.

SELF-EVALUATION QUESTIONS

1. (True/False) The BCB will be queued on a character service queue when character service is required for a line.

2. Character service processing is required when the L2 interrupt handler determines an address of _____ for the CCB when using the Type 1 CS.

3. The BCB consists of 16 bytes and is physically located in core as part of the _____ control table.

4. Match the name of the BCB field in Column A with its function in Column B.

Column A	Column B
_____ a. SDF	1. Points to ICP control block for this line.
_____ b. Bit Service Address	2. Routine that will handle bit service for this line.
_____ c. XMIT/RCV mask	3. Controls state sequencing for S/S, BSC or dial operations.
_____ d. CCB Address	4. Character serializing/deserializing.
_____ e. SCF Field	5. Controls serializing/deserializing of S/S and BSC.
_____ f. PDF field	6. Provides control information between LCP and the Scanner.
_____ g. ICW2 field	7. Character buffer.

5. On BSC lines, the BCB must have the PCF flag field state set to _____ _____ for a receive condition.

6. List the conditions which must exist before the 3704/3705 Type 1 Scanner can take a character service interrupt. Either:

   a. _____

   b. _____

   c. _____

7. (True/False). The Type 1 CS bit service routine outputs characters directly to the line.

8. The bit service routines must call for a character service request on xmitting/receiving the last bit of a character by issuing Output x'_____' instruction.

9. The _____ Control Block is put on the Character Service Queue when character service is required by the bit service routines.

REVIEW & SYSTEM DEBUG

In this topic, a complete review of the 3704/3705 Emulation Program will be presented with emphasis on debugging procedures. A hands-on lab will precede the lecture part of this topic.

OBJECTIVE

Upon completion of this topic the student, using the available support documentation, should be able to:

1. Analyze and correct programming dump failures resulting from either hardware or software failures.
2. Use all debugging aids and philosophy to determine if a hardware or software error exists in the 3704/3705.
3. Describe the basic functions of each component and/or program component during a read or transmit operation occurring in the 3704/3705 operating in EP mode.

Activity

Review: 3704/3705 EP PLM

Lab: Your instructor will assign T/A problems on a team basis. The class will critique these bugs to aid in developing a service approach.

SOFT/HARDWARE SERVICE APPROACH

There are separate service and diagnostic aids provided for the 3704/3705 software and hardware. These aids will be introduced in this topic. The aim is to acquaint the PSRs with the hardware aids so that they may understand the source and purpose of diagnostic information provided by the machine operator or hardware CE. A suggested approach for the PSR will be discussed on how to use the software aids in conjunction with hardware output in helping to solve Emulator Program problems.

OBJECTIVE

Upon completion of this topic, the student, using the available support documentation, should be able to:

1. State the basic hardware problem determination tools the user and/or hardware CE will use in attempting to isolate trouble to lines, 3704/3705 hardware or 3704/3705 EP.
2. State the purpose of the Internal Functional Tests (IFT) in problem analysis.
3. State the software service aids available with the 3704/3705 running in Emulator mode.

Activity

Read: 3704/3705 EP PLM
Log Message Section
FE Trace Facility Section

Review: EP Generation and Utilities Manual - Trace Facility
3704/3705 Operator's Guide - Problem Determination

SELF-EVALUATION QUESTIONS

1. The IFTs are provided for use by the _____ and _____ and possibly the PSR to isolate 3704/3705 failures.

2. Select from the list below, those items which are service aids to be used by the customer and/or hardware CE.

a. _____ Console hard-stop error lights
b. _____ FE Trace Facility
c. _____ Halfword Log Messages displayed on CE panel
d. _____ On-Line terminal tests under BTAM, QTAM, or TCAM
e. _____ OS error messages printed on the CPU console
f. _____ 3704/3705 Core dump
g. _____ 2701, 2702, 2703 OLT's available under OLTEP or TOTE
h. _____ CE Panel Support
j. _____ Terminal tests under OLTEP, or TOTE
k. _____ IFT's under OLTEP, OLTSEP, or TOTE
l. _____ Program microfiche

3. The software service aids available with the 3704/3705 EP are:

a. _____

b. _____

c. _____

4. (True/False) System OLTEP will support the 3704/3705 IFTs.

5. a. (True/False) The messages used for either OLTEP or OLTSEP are identical; ie, the DEV/TEST/OPTION fields are the same.

Refer to the Contents for the location of the self-evaluation question answers.

EMULATOR UPDATE - FINAL QUIZ - REVIEW

Any major changes to the emulator due to new releases or maintenance releases will be presented. The final quiz and review will be administered. In addition, final class administration matters will be handled.

OBJECTIVE

Upon completion of this topic, the student, using the available support documentation, should be able to:

1. Answer a series of questions or work problems that test the comprehensive knowledge of the implementation and logic flow of the 3704/3705 EP.

Activity

Lab: Part of this topic is comprised of the final quiz. Please use all available documentation to pass this quiz.

LAB PROJECT - 3704/3705 CONFIGURATION EXERCISE (1-1)

Objective

Upon completion of this project, the student, using the available support documentation, should be able to:

1. Given a sample TP network to configure for 3705 operation, identify the 3704/3705 hardware components required to support the network operating in Emulation mode.

Time - required to complete this project averages 2.0 hours.

Tools, Test Equipment and Documentation

3704/3705 Introduction SRL
3704/3705 Principles of Operation - Introduction

Directions

You are to use all documentation in conjunction with the following information to configure a 3704/3705 hardware box. The correct results of this configuration will be used in Topic 2 as input data for building a 3705 EP load module. While this will not normally be your task, it will make meaningful the relationship between the hardware components and systems generation.

A. 1. Conversion is being done from a 2703 with 10 lines with these channel addresses, terminals and locations:

060	2740-1	065	2770
061	"	066	"
062	"	067	"
063	"	068	~~Western Union Teletype - 115A~~ } TELEGRAPH LINE 1050
064	2770	069	~~" " " "~~ } 1050

S.S.
BIS

2. The line adapters and modems in the 2703 environment provided for IBM modems with speeds of 75 bps through 1200 bps.

3. All lines were half duplex.

B. 1. The 3705 replacement will run in EP mode, emulating the 2703. It will have 16K core. The same line speeds and number of lines.

2. Customer desires to eliminate as many modems as possible since 2 S/S and 2 bisync lines are in the same computer room.

3. The low cost programmable scanner will be used. Five line sets are to be configured.

C. When you have completed your configuration, see your instructor for review. A general class review will be held to prepare for Topic 2 Lab Project assignments.

Work with your partner only. Remember this is a learning exercise and your application will benefit you if you are conscientious in your efforts.

LAB PROJECT - SYSGEN PROCEDURES (2-1)

Objective

Upon completion of this topic, the student, using the available support documentation, should be able to:

1. Use the 3704/3705 EP macros and specify the correct macro sequence and macro parameters to build an Emulation Program.
2. Write and/or verify JCL to load or dump the 3704/3705 using the 3704/3705 loader and dump utilities.
3. Describe the installation procedures to include and catalog the Emulation Program macros and object modules in the operating system's data sets.

Time - required to complete this project averages 2 hours.

Tools, Test Equipment and Documentation

3704/3705 EP Generation Guide and Utilities
This Student Guide - Appendix A
- Installation Newsletter

Directions

For the attached System configuration, include the 3704/3705 Emulation Program components into the Operating Systems using installation procedures. Code the necessary SYSGEN macros and load and dump the EP Program.

This project is made up of several steps that, if done properly, will take you through a complete SYSGEN.

Step 1. Including the PID Components

Answer the following questions and have your instructor correct them when you are finished.
Note: Complete those questions pertaining to your system background.
Time: Approximately 30 minutes.

OS 1. The 3704/3705 Emulation Package comes from PID.
List the contents of the 2 tapes for an OS System:

Tape 1 _____

_____

Tape 2 _____

_____

2. a. What two data sets must be preallocated and cataloged for installation of the PID tape? _____

_____

b. What two additional data sets need to be preallocated and cataloged for the stage 2 of SYSGEN? _____

_____

3. (True/False) The 3704/3705 must have a separate UCB to be used for addressing while loading and dumping the EP.

4. Give the command to start the reader to read the PID tapes:

_____

_____

5. The OS System must be at release _____ or higher to support the 3704/3705 SSP under EP.

6. How many steps are included in the complete 3704/3705 Emulation SYSGEN procedure? _____
Name them and describe what they accomplish:

_____

_____

_____

_____

_____

DOS 1. The 3704/3705 Emulation Package comes from PID. List the contents of the 2 tapes for a DOS System.

Tape 1 _____

_____

Tape 2 _____

_____

2. Prior to installing the PID Package you must assure that there is sufficient space on the following Libraries:

_____

_____

_____

3. The 3704/3705 must have a _____ PUB assigned/included for loading and dumping the 3704/3705.

4. An ASSGN command must be issued for _____ where the tapes are to be mounted.

5. The DOS System must be at release _____ for a 360 System or release _____ for a 370 System in order to support the SSP.

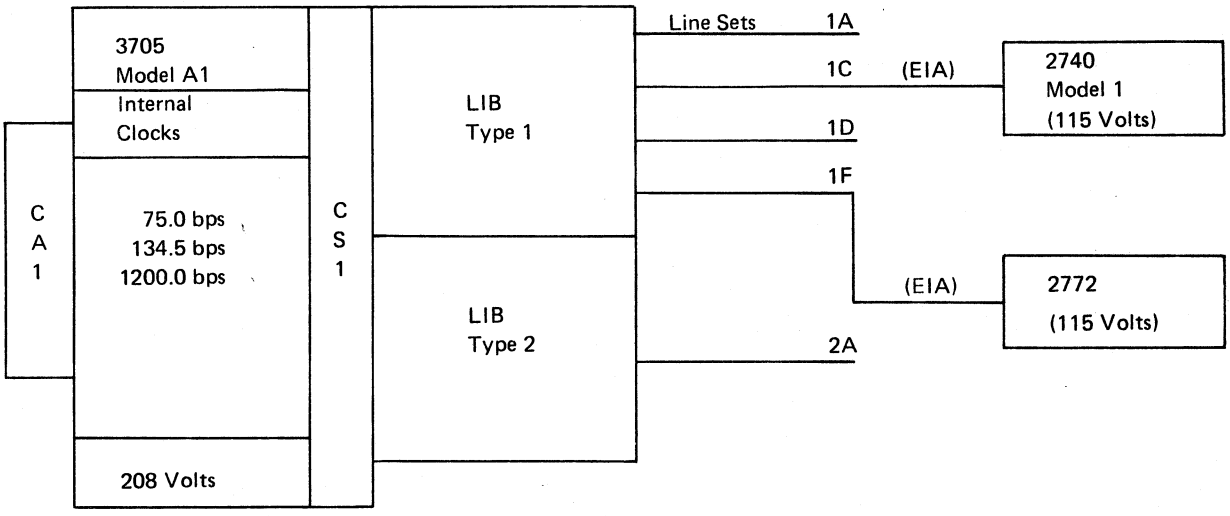
Step 2. SYSGEN the EP Module

Using the following names, and the attached configuration sample duplicated from Lab project 1, write the Stage 1 macros and parameters that will represent this system.

SYSGEN Macros on SYS1.MAC3705
EP Load Module on SYS1.EPDTASET
STAGE 2 Assemblies on SYS1.EPOBJECT
EP Load Module name FECDEPA1
Stage 1 output on Tape with No label

When you have completed coding this step, see your instructor for corrections. A classroom review will be held to review and discuss this step when all students finish.

Time: Approximately 2 hours



LIB 1 Line Sets	Chan. Addr.	Line	Line	Speed	Terminal Type	Line Ctl.
1A	060,061	004,	005	134	2740-1	SS
1C	062,063	006,	007	134	2740-1	SS
1D	064,065	000,	001	1200	2770	BSC
1F	066,067	002,	003	1200	2770	BSC
LIB 2						
2A	068,069	010,	011	75	115A	SS

All Internal Clocking
IBM Modems
Half Duplex Lines
No Switched Lines
2740 Station Control
LRC Checking
BiSync line code - EBCDIC

Step 3 Loading and Dumping the EP Load Module

A. Using the following Data Set names, write the JCL to load the 3704/3705 EP that would have been SYSGENed from the macros you coded in step 2.

B. Write the JCL to dump the 3704/3705 EP you just loaded.

C. Proc. JCL will be used to load/ dump the EP Load module during the lab hands-on portion of lab.

D. The following data sets contain the EP Load module and bring up exercisers
   1. SYS1.EPDTASET
   2. SYS1.EXERCISE

LAB PROJECT - STAGE 1 ASSEMBLY DIAGNOSTIC (2-2)

Objective

Upon completion of this project, the student, using the available support documentation, should be able to:

State the corrective action, procedure or modification to be taken to correct errors during SYSGEN of the 3704/3705 EP given the diagnostic aid and/or error indications.

Time - required to complete this project averages 1.5 hours.

Tools, Test Equipment and Documentation

3704/3705 Emulation Program Generation and Utilities Guide
Attached Assembly Listing

Directions -

Using the Stage 1 assembly listing and the question sheet, resolve the error condition which exist in the assembly. The logic errors contained in this stage 1 assembly precluded a stage 2 input from being punched.

STUDENT QUESTION SHEET

When you have successfully found and rectified the errors you think exist in this listing, see your instructor for correction. Turn in this answer sheet for grading.

1. Error 1 explanation: _____

_____

Correction: _____

2. Error 2 explanation: _____

_____

Correction: _____

3. Error 3 explanation: _____

_____

Correction: _____

4. Error 4 explanation: _____

_____

Correction: _____

5. Error 5 explanation: _____

_____

Correction: _____

```
//RC3705A JOB MSGLEVEL=1,CLASS=J
// EXEC PGM=IFKASM,PARM=(NOLOAD,DECK),REGION=100K
//SYSLIB DD DSN=SYS1.MAC3705,DISP=SHR,VOL=SER=MVT210,UNIT=2314
//SYSUT1 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSUT2 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSUT3 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSPRINT DD SYSOUT=A
//SYSPUNCH DD SYSOUT=B
//SYSIN DD *
IEF236I ALLOC. FOR RC3705A
IEF237I 137   ALLOCATED TO SYSLIB
IEF237I 136   ALLOCATED TO SYSUT1
IEF237I 134   ALLOCATED TO SYSUT2
IEF237I 134   ALLOCATED TO SYSUT3
IEF237I 137   ALLOCATED TO SYSPRINT
IEF237I 130   ALLOCATED TO SYSPUNCH
IEF237I 130   ALLOCATED TO SYSIN
```

LOC OBJ CODE R1N1M R2N2 ADDR STMT SOURCE STATEMENT 18MAR72 9/08/72

```
                    1 A37057F BUILD  HICHAN=07B                                          C
                                     LOADLIB=EPDTASET,                                   C
                                     LOCHAN=070,                                         C
                                     NEWNAME=EPLP61,                                     C
                                     OBJLIB=EPOBJECT,                                    C
                                     UNIT=2314


                    3                *,*************************************
                    4                *,                                    *
                    5                *,          SYSTEM PARAMETERS         *
                    6                *,                                    *
                    7                *,*************************************


                    9                *,TYPSYS OMITTED, OS IS ASSUMED
                   10                *,UNIT NOT SPECIFIED, DEFAULT ASSUMED
                   11                *,  SYSSQ FOR ASSEMBLIES
                   12                *,  SYSDA FOR LINK EDITS
                   13                *, QUALIFY NOT SPECIFIED, SYS1 IS ASSUMED
                   14                *,NO REGION SIZE FOR STAGE 2 LINKAGE EDIT STEPS
                   15                *, HAS BEEN SPECIFIED, THE SYSTEM DEFAULT IS ASSUMED
                   16                8,IFQ030I OBJLIB NOT SPECIFIED, REQUIRED
                   17                8,IFQ030I LOADLIB NOT SPECIFIED, REQUIRED
                   18                *,THE HIGHEST CHANNEL ADDRESS IS 07B
                   19                8,IFQ030I LOCHAN NOT SPECIFIED, REQUIRED
                   20                *, NEWNAME NOT SPECIFIED, EP001 IS ASSUMED
                   21                *,LINETRC OMITTED,YES ASSUMED


                   23 CS1      CSB SPEED=(75,134.2400),                                 C
                                     WRAPLN=004,                                         C
                                     TYPE=TYPE1


                   25                *,*************************************
                   26                *,                                    *
                   27                *,      COMMUNICATIONS SCANNER BASE   *
                   28                *,                                    *
                   29                *,*************************************


                   31                *,MOD NOT SPECIFIED, 0 IS ASSUMED
                   32                *, THIS CSB IS ATTACHED TO THE BASE MODULE
                   33                *,  LINE INTERFACE ADDRESSES 000-03F AVAILABLE
                   34                *, THIS CSB HAS THE FOLLOWING DATA RATES
                   35                *,  75 BPS
                   36                *,  134.5 BPS
                   37                *,  2400 BPS
                   38                *, THIS A TYPE1 CSB
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/08/72
                                    39               *, WRAP LINE ADDRESS IS 004 FOR MOD=0


                                    41 GRP1     GROUP CLOCKING=INT,                                          C
                                                      INTPRI=U,                                              C
                                                      SPEED=134,                                             C
                                                      TERM=2740-1
       *** ERROR ***
                                    42 L1A42740 LINE ADDRESS=(004,070)


                                    44               8,IFQ0006I SEQUENCE ERROR, GROUP NOT DEFINED


                                    46               *,*************************************
                                    47               *,                                   *
                                    48               *,            LINE FEATURES          *
                                    49               *,                                   *
                                    50               *,*************************************

35
                                    52               *, LINE INTERFACE ADDRESS IS 004
                                    53               8,IFQ108I CHANADDR=070 NOT CHECKED FOR LOCHAN-HICHAN
                                    54               *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                    55               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                    56               *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                    57               8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                                    58               8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                                    59               *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                                    60               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                    61               *,*D* OPTION2 MODEM TYPE
                                    62               *, NO SPECIAL FEATURES SPECIFIED
                                    63               *,*D*   NO IMMEDIATE END
                                    64               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                    65               *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                    66               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                    67               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL


                                    69 L1A52740 LINE ADDRESS=(005,071)


                                    71               *,*************************************
                                    72               *,                                   *
                                    73               *,            LINE FEATURES          *
                                    74               *,                                   *
                                    75               *,*************************************


                                    77               *, LINE INTERFACE ADDRESS IS 005
                                    78               8,IFQ108I CHANADDR=071 NOT CHECKED FOR LOCHAN-HICHAN
                                    79               *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                    80               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                    81               *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
```

```
                                 8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                                 8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                                 *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                                 *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                 *,*D* OPTION2 MODEM TYPE
                                 *, NO SPECIAL FEATURES SPECIFIED
                                 *,*D*   NO IMMEDIATE END
                                 *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                 *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                 *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                 *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                              94 L1C62740 LINE ADDRESS=(006,072)

                                 *,****************************************
                                 *,                                      *
                                 *,            LINE FEATURES             *
                                 *,                                      *
                                 *,****************************************

                                 *, LINE INTERFACE ADDRESS IS 006
                                 8,IFQ108I CHANADDR=072 NOT CHECKED FOR LOCHAN-HICHAN
                                 *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                 *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                 *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                 8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                                 8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                                 *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                                 *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                 *,*D* OPTION2 MODEM TYPE
                                 *, NO SPECIAL FEATURES SPECIFIED
                                 *,*D*   NO IMMEDIATE END
                                 *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                 *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                 *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                 *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                             119 L1C72740 LINE ADDRESS=(007,073)

                                 *,****************************************
                                 *,                                      *
                                 *,            LINE FEATURES             *
                                 *,                                      *
                                 *,****************************************

                                 *, LINE INTERFACE ADDRESS IS 007
                                 8,IFQ108I CHANADDR=073 NOT CHECKED FOR LOCHAN-HICHAN
                                 *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                 *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/08/72
                                  131               *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                  132               8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                                  133               8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                                  134               *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                                  135               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  136               *,*D* OPTION2 MODEM TYPE
                                  137               *, NO SPECIAL FEATURES SPECIFIED
                                  138               *,*D*   NO IMMEDIATE END
                                  139               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                  140               *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  141               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  142               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                  144 L4A20274 LINE ADDRESS=(020,07A),                                C
                                                    MODEM=OPTION1

                                  146               *,****************************************
                                  147               *,                                      *
                                  148               *,            LINE FEATURES             *
                                  149               *,                                      *
                                  150               *,****************************************

                                  152               *, LINE INTERFACE ADDRESS IS 020
                                  153               8,IFQ108I CHANADDR=07A NOT CHECKED FOR LOCHAN-HICHAN
                                  154               *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                  155               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  156               *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                  157               8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                                  158               8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                                  159               *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                                  160               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  161               *, OPTION1 MODEM TYPE
                                  162               *, NO SPECIAL FEATURES SPECIFIED
                                  163               *,*D*   NO IMMEDIATE END
                                  164               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                  165               *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  166               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  167               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                  169 L4A21274 LINE ADDRESS=(021,07B),                                C
                                                    MODEM=OPTION1

                                  171               *,****************************************
                                  172               *,                                      *
                                  173               *,            LINE FEATURES             *
                                  174               *,                                      *
                                  175               *,****************************************

                                  177               *, LINE INTERFACE ADDRESS IS 021
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/08/72
                                  178              8,IFQ108I CHANADDR=078 NOT CHECKED FOR LOCHAN-HICHAN
                                  179              *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                  180              *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  181              *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                  182              8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                                  183              8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                                  184              *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                                  185              *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  186              *, OPTION1 MODEM TYPE
                                  187              *, NO SPECIAL FEATURES SPECIFIED
                                  188              *,*D*   NO IMMEDIATE END
                                  189              *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                  190              *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  191              *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  192              *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                  194 L2A10TTY LINE ADDRESS=(010,078),                                C
                                                    SPEED=75,                                         C
                                                    TERM=115A

                                  196              *,*************************************
                                  197              *,                                   *
                                  198              *,            LINE FEATURES          *
                                  199              *,                                   *
                                  200              *,*************************************

                                  202              *, LINE INTERFACE ADDRESS IS 010
                                  203              8,IFQ108I CHANADDR=078 NOT CHECKED FOR LOCHAN-HICHAN
                                  204              *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                  205              *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  206              *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                  207              8,IFQ038I SPEED=75 INVALID, CSB OSCILLATOR SPEED
                                  208              *,        LESS THAN ONE HALF OF LINE SPEED NOT FOUND,
                                  209              *,        REQUIRED FOR EXTERNAL CLOCKING
                                  210              *, TERMINAL TYPE IS 115A
                                  211              *,*D* UNIT EXCEPTION WILL BE ISSUED UPON EOT
                                  212              *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  213              *,*D* OPTION2 MODEM TYPE
                                  214              *, NO SPECIAL FEATURES SPECIFIED
                                  215              *,*D*   NO IMMEDIATE END
                                  216              *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                  217              *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  218              *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  219              *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                  221 L2A11TTY LINE ADDRESS=(011,079),                                C
                                                    SPEED=75,                                         C
                                                    TERM=115A

                                  223              *,*************************************
```

```
                        224                 *,                                      *
                        225                 *,            LINE FEATURES             *
                        226                 *,                                      *
                        227                 *,**************************************

                        229                 *, LINE INTERFACE ADDRESS IS 011
                        230                 8,IFQ108I CHANADDR=079 NOT CHECKED FOR LOCHAN-HICHAN
                        231                 *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                        232                 *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                        233                 *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                        234                 8,IFQ038I SPEED=75 INVALID, CSB OSCILLATOR SPEED
                        235                 *,        LESS THAN ONE HALF OF LINE SPEED NOT FOUND,
                        236                 *,        REQUIRED FOR EXTERNAL CLOCKING
                        237                 *, TERMINAL TYPE IS 115A
                        238                 *,*D* UNIT EXCEPTION WILL BE ISSUED UPON EOT
                        239                 *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                        240                 *,*D* OPTION2 MODEM TYPE
                        241                 *, NO SPECIAL FEATURES SPECIFIED
                        242                 *,*D*   NO IMMEDIATE END
                        243                 *,*D*   LONGITUDINAL REDUNDANCY CHECK
                        244                 *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                        245                 *,*D* HALF DUPLEX COMMUNICATIONS LINE
                        246                 *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                        248 GRP2    GROUP LNCTL=SS,                                     C
                                          DIAL=YES,                                     C
                                          SPEED=2400,                                   C
                                          TERM=2770

                        250                 *,**************************************
                        251                 *,                                      *
                        252                 *,            GROUP FEATURES            *
                        253                 *,                                      *
                        254                 *,**************************************

                        256                 *, THE LINES IN THIS GROUP ARE SWITCHED
                        257                 *, THE LINES IN THIS GROUP ARE START/STOP
                        258                 *,*D* REPLY TIMEOUT IS 3.0 SECONDS
                        259                 *,*D* TEXT TIMEOUT IS 25.6 SECONDS
                        260                 *,*D* EOT FOR TWX TERMINALS IS TRANSMIT-ON, AND
                        261                 *,    TRANSMIT-OFF
                        262                 *,
                        263                 *,********* LINE CHARACTERISTICS *********
                        264                 *,
                        265                 4,IFQ013I PARAMETERS CONFLICT, TERM=2770 VALID
                        266                 *,        ONLY WITH LNCTL=BSC, IGNORED
                        267                 4,IFQ011I SPEED=2400 INVALID, IGNORED

                        269 L1D02770 LINE ADDRESS=(000,074),                            C
                                          AUTO=008
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72  9/08/72
                                  271               *,**************************************
                                  272               *,                                     *
                                  273               *,            LINE FEATURES            *
                                  274               *,                                     *
                                  275               *,**************************************

                                  277               *, LINE INTERFACE ADDRESS IS 000
                                  278               8,IFQ108I CHANADDR=074 NOT CHECKED FOR LOCHAN-HICHAN
                                  279               *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                  280               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  281               *, AUTOCALL UNIT IS ON LINE ADDRESS 008
                                  282               *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                  283               8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                                  284               8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                                  285               *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                                  286               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  287               *,*D* OPTION2 MODEM TYPE
                                  288               *, NO SPECIAL FEATURES SPECIFIED
                                  289               *,*D*   NO IMMEDIATE END
                                  290               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                  291               *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  292               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  293               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                  295 L1D12770 LINE ADDRESS=(001,075),                                C
                                                    AUTO=009

                                  297               *,**************************************
                                  298               *,                                     *
                                  299               *,            LINE FEATURES            *
                                  300               *,                                     *
                                  301               *,**************************************

                                  303               *, LINE INTERFACE ADDRESS IS 001
                                  304               8,IFQ108I CHANADDR=075 NOT CHECKED FOR LOCHAN-HICHAN
                                  305               *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                                  306               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  307               *, AUTOCALL UNIT IS ON LINE ADDRESS 009
                                  308               *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                  309               8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                                  310               8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                                  311               *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                                  312               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  313               *,*D* OPTION2 MODEM TYPE
                                  314               *, NO SPECIAL FEATURES SPECIFIED
                                  315               *,*D*   NO IMMEDIATE END
                                  316               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                  317               *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  318               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  319               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/08/72

                              321 GRP3     GROUP LNCTL=BSC,                                          C
                                                 CLOCKING=INT,                                       C
                                                 SPEED=2400,                                         C
                                                 TERM=2770
       *** ERROR ***
                              322 L1F22770 LINE ADDRESS=(002,076)


                              324                *,*************************************
                              325                *,                                   *
                              326                *,           LINE FEATURES           *
                              327                *,                                   *
                              328                *,*************************************


                              330                *, LINE INTERFACE ADDRESS IS 002
                              331                8,IFQ108I CHANADDR=076 NOT CHECKED FOR LOCHAN-HICHAN
                              332                *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                              333                *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                              334                *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                              335                8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                              336                8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                              337                *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                              338                *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                              339                *,*D* OPTION2 MODEM TYPE
                              340                *, NO SPECIAL FEATURES SPECIFIED
                              341                *,*D*   NO IMMEDIATE END
                              342                *,*D*   LONGITUDINAL REDUNDANCY CHECK
                              343                *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                              344                *,*D* HALF DUPLEX COMMUNICATIONS LINE
                              345                *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                              347 L1F32770 LINE ADDRESS=(003,077)

                              349                *,*************************************
                              350                *,                                   *
                              351                *,           LINE FEATURES           *
                              352                *,                                   *
                              353                *,*************************************


                              355                *, LINE INTERFACE ADDRESS IS 003
                              356                8,IFQ108I CHANADDR=077 NOT CHECKED FOR LOCHAN-HICHAN
                              357                *,        ASSOCIATION, ERROR IN LOCHAN OR HICHAN
                              358                *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                              359                *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                              360                8,IFQ030I SPEED NOT SPECIFIED, REQUIRED
                              361                8,IFQ027I TERM NOT SPECIFIED, REQUIRED WHEN CUTYPE
                              362                *,        NOT SPECIFIED AND LINE CONTROL IS START/STOP
                              363                *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                              364                *,*D* OPTION2 MODEM TYPE
                              365                *, NO SPECIAL FEATURES SPECIFIED
                              366                *,*D*   NO IMMEDIATE END
```

LOC OBJ CODE R1N1M R2N2 ADDR STMT SOURCE STATEMENT 18MAR72 9/08/72

```
                      367                *,*D*   LONGITUDINAL REDUNDANCY CHECK
                      368                *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                      369                *,*D* HALF DUPLEX COMMUNICATIONS LINE
                      370                *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                      372 FINI      GENEND

                      374                *,**************************************
                      375                *,                                    *
                      376                *,          END OF GENERATION         *
                      377                *,                                    *
                      378                *,**************************************



                      382  END
```

```
STMT  ERROR CODE   MESSAGE

   16  IFK037      MNOTE STATEMENT
   17  IFK037      MNOTE STATEMENT
   19  IFK037      MNOTE STATEMENT
   41  IFK066      UNDEFINED OR DUPLICATE KEYWORD OPERAND OR EXCESSIVE POSITIONAL OPERANDS
   44  IFK037      MNOTE STATEMENT
   53  IFK037      MNOTE STATEMENT
   57  IFK037      MNOTE STATEMENT
   58  IFK037      MNOTE STATEMENT
   78  IFK037      MNOTE STATEMENT
   82  IFK037      MNOTE STATEMENT
   83  IFK037      MNOTE STATEMENT
  103  IFK037      MNOTE STATEMENT
  107  IFK037      MNOTE STATEMENT
  108  IFK037      MNOTE STATEMENT
  128  IFK037      MNOTE STATEMENT
  132  IFK037      MNOTE STATEMENT
  133  IFK037      MNOTE STATEMENT
  153  IFK037      MNOTE STATEMENT
  157  IFK037      MNOTE STATEMENT
  158  IFK037      MNOTE STATEMENT
  178  IFK037      MNOTE STATEMENT
  182  IFK037      MNOTE STATEMENT
  183  IFK037      MNOTE STATEMENT
  203  IFK037      MNOTE STATEMENT
  207  IFK037      MNOTE STATEMENT
  230  IFK037      MNOTE STATEMENT
  234  IFK037      MNOTE STATEMENT
  265  IFK037      MNOTE STATEMENT
  267  IFK037      MNOTE STATEMENT
  278  IFK037      MNOTE STATEMENT
  283  IFK037      MNOTE STATEMENT
  284  IFK037      MNOTE STATEMENT
  304  IFK037      MNOTE STATEMENT
  309  IFK037      MNOTE STATEMENT
  310  IFK037      MNOTE STATEMENT
  321  IFK066      UNDEFINED OR DUPLICATE KEYWORD OPERAND OR EXCESSIVE POSITIONAL OPERANDS
  331  IFK037      MNOTE STATEMENT
  335  IFK037      MNOTE STATEMENT
  336  IFK037      MNOTE STATEMENT
  356  IFK037      MNOTE STATEMENT
  360  IFK037      MNOTE STATEMENT
  361  IFK037      MNOTE STATEMENT


   42 STATEMENTS FLAGGED IN THIS ASSEMBLY
   12 WAS HIGHEST SEVERITY CODE
*STATISTICS*     SOURCE RECORDS (SYSIN) =     43      SOURCE RECORDS (SYSLIB) =  6169
*OPTIONS IN EFFECT*   LIST, DECK, NOLOAD, NORENT, XREF, LINECNT =  55
  433 PRINTED LINES
```

LAB PROJECT - QUEUES AND CONTROL BLOCKS (3-1)

Objective

Upon completion of this project, the student, using the available support documentation, should be able to:

1. Use a 3704/3705 dump of the EP to locate the control blocks/tables and queues and state when they were allocated or initiated.
2. Determine from the queues and control blocks of a 3704/3705 EP dump, the status and/or condition of specified portions of the 3704/3705 at the time the dump was taken.

Time required to complete this project averages 3.0 hours.

Tools, Test Equipment, and Documentation

1. 3704/3705 EP dump from the CS1 following directions.
2. 3704/3705 Program Reference Handbook.
3. 3704/3705 EP SYSGEN and Utilities Manual.
4. 3704/3705 EP Stage I and II Assemblies following directions.

Directions

Using the material supplied, answer the following questions pertaining to the dump, Stage I and Stage II materials:

A1. Using the Link edit map and Stage II assembly, complete the drawing by filling in the core map with module/control blocks names provided in the list.

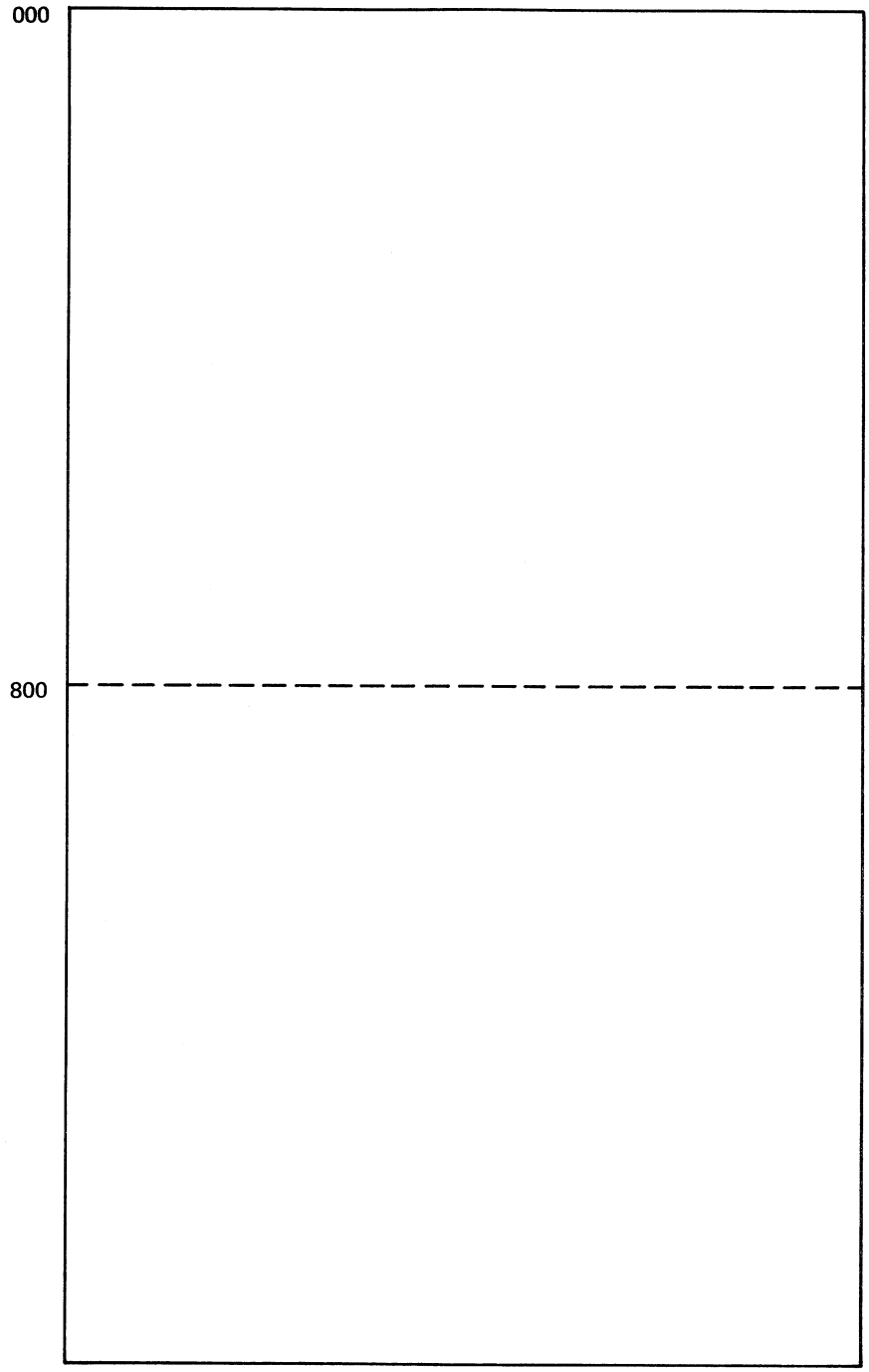
CYANUC CSECT	Character Control Blocks
Line Vector Table	Bit Control Blocks
Line Group Table	ICE Routines
PCF Vector Table	Channel Vector Table
Interrupt Handlers	LCP Character Service Routines
	LCP Bit Service Routines

Note: Use the drawing on the next page.

A2. Using the Stage II assembly from the SCM, list what CSECTS of code and/or control blocks/tables are assembled. _____

_____

_____



CORE MAP

B. **Locations and Displacements**

1. Location in CYANUC of the L1 interrupt handler _____.

   Location in CYANUC of the L2 interrupt handler _____

   Location in CYANUC of the L3 interrupt handler _____

   Location in CYANUC of the PCF Vector Table _____

2. The first CCB starts at location _____.

   The first BCB starts at location _____.

   The BCB is included in the _____ table for the Type 1 scanner. This table will contain only the _____ address if the Type 2 scanner is installed on the 3705.

3. In the third BCB, the BCBACB field points to which line addresses CCB _____.

4. The CHVT Lo channel address at core location _____ contains the subchannel address _____.

5. The CCB for line ØØØ has the following information in the fields:

   CCBL2 _____
   CCBDATA1 _____

   CCBCMD _____
   CCBSTAT _____
   CCBFLGB1 _____
   CCBFLGB2 _____

6. The BCB for subchannel address 0B0 is located at core location _____ _____.

   The following information is contained in the fields:

   BCBACB _____
   BCBLINK _____
   BCBPDF _____
   BCBMASK _____

7. How many CCBs were generated for this EP? _____
   Why? _____

8. How many entries are there in the LGT? _____
Why? _____.

9. The Line Vector Table has the BCBs in ascending order by _____ address. What Stage 1 SYSGEN macro correlates the sub-channel and line address? _____

10. The Log Error Halfword contains the following in core _____

_____

_____

11. The contents of the first halfword of this table contains _____.
It is used for what purpose? _____

_____

12. The CE trace is known as _____ (CSECT name). It is located in core location _____ for this EP. The contents of the first entry in this table are: _____

_____

13. How many data service queues are in the EP system? _____

14. The following core addresses are in the QCB fields:

QCBDSOF _____
QCBDSIF _____
QCBSOF _____
QCBCSPQ1 _____
QCBCSPQ2 _____

15. The CSPQ1 and CSPQ2 fields in the QCB point to what control block and is used for what purpose? _____

_____

_____

STAGE 1 ASSEMBLY
of
FEEDEPBF
(CS-1)

```
IEF298I  RC3705A  SYSOUT=B.
//RC3705A JOB MSGLEVEL=1,CLASS=J
// EXEC PGM=IFKASM,PARM=(NOLOAD,DECK),REGION=100K
//SYSLIB DD DSN=SYS1.MAC3705,DISP=SHR,VOL=SER=MVT210,UNIT=2314
//SYSUT1 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSUT2 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSUT3 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSPRINT DD SYSOUT=A
//SYSPUNCH DD SYSOUT=B
//SYSIN DD *
IEF236I ALLOC. FOR RC3705A
IEF237I 137   ALLOCATED TO SYSLIB
IEF237I 131   ALLOCATED TO SYSUT1
IEF237I 131   ALLOCATED TO SYSUT2
IEF237I 133   ALLOCATED TO SYSUT3
IEF237I 133   ALLOCATED TO SYSPRINT
IEF237I 134   ALLOCATED TO SYSPUNCH
IEF237I 130   ALLOCATED TO SYSIN
```

LOC OBJ CODE P1N1M R2N2 ADDR STMT SOURCE STATEMENT 18MAR72 9/07/72

```
                    1 A37058F BUILD  HICHAN=0B7,                                          C
                                     LOADLIB=EPDTASET,                                    C
                                     LOCHAN=0B0,                                          C
                                     NEWNAME=FEEDEPBF,                                    C
                                     OBJLIB=EPOBJECT,                                     C
                                     UNIT=2314


                    3                *,*************************************
                    4                *,                                   *
                    5                *,          SYSTEM PARAMETERS        *
                    6                *,                                   *
                    7                *,*************************************


                    9                *,TYPSYS OMITTED, OS IS ASSUMED
                   10                *,UNIT TYPE FOR STAGE 2 IS 2314
                   11                *, QUALIFY NOT SPECIFIED, SYS1 IS ASSUMED
                   12                *,NO REGION SIZE FOR STAGE 2 LINKAGE EDIT STEPS
                   13                *, HAS BEEN SPECIFIED, THE SYSTEM DEFAULT IS ASSUMED
                   14                *, SYS1.EPOBJECT WILL CONTAIN OUTPUT
                   15                *,  FROM STAGE 2 ASSEMBLIES
                   16                *, SYS1.EPDTASET WILL CONTAIN THE
                   17                *,  GENERATED EMULATOR LOAD MODULE
                   18                *,THE HIGHEST CHANNEL ADDRESS IS 0B7
                   19                *,THE LOWEST CHANNEL ADDRESS IS 0B0
                   20                *, THE NEW LOAD MODULE NAME IS FEEDEPBF
                   21                *,LINETRC OMITTED,YES ASSUMED
                   22+           PUNCH '//EPGEN JOB (IFG,396,060,1),PGMRNME,MSGLEVEL=(1,1)'

                   24+           PUNCH '//S1 EXEC PGM=IFKASM,PARM=''DECK'''
                   25+           PUNCH '//SYSPRINT DD SYSOUT=A'
                   26+           PUNCH '//SYSUT1 DD UNIT=2314,SPACE=(1700,(400,50))'
                   27+           PUNCH '//SYSUT2 DD UNIT=2314,SPACE=(1700,(400,50))'
                   28+           PUNCH '//SYSUT3 DD UNIT=2314,SPACE=(1700,(400,50))'
                   29+           PUNCH '//SYSLIB DD DSN=SYS1.MAC3705,DISP=SHR'
                   30+           PUNCH '//SYSPUNCH DD DSN=SYS1.EPOBJECT(FEEDEPBF),DISP=OLD'
                   31+           PUNCH '//SYSIN DD *'
                   32+           PUNCH 'CYALNVT  CSECT'
                   33+           PUNCH '         DC    2F''0'''
                   34+           PUNCH 'CYACHVT  CSECT'
                   35+           PUNCH 'CYACHVTP EQU *-2*176+X''7FA'''
                   36+           PUNCH '         ENTRY CYAWRAP,CYACHEND,CYACHVTP'
                   37+           PUNCH '         DC    AL1(176)'
                   38+           PUNCH '         DC    AL1(183)'
                   39+           PUNCH '         DS    (183-176+1)H'
                   40+           PUNCH '          DC    X''0001'''
                   41+           PUNCH 'CYACHEND EQU *-2'
                   42+           PUNCH 'CYAWRAP  EQU   *'


                   44 CS1        CSB SPEED=(134,1200,2400),                              C
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/07/72
                                          WRAPLN=004,                                              C
                                          TYPE=TYPE1


                                   46     *,*****************************************
                                   47     *,                                         *
                                   48     *,      COMMUNICATIONS SCANNER BASE        *
                                   49     *,                                         *
                                   50     *,*****************************************


                                   52     *,MOD NOT SPECIFIED, 0 IS ASSUMED
                                   53     *, THIS CSB IS ATTACHED TO THE BASE MODULE
                                   54     *,  LINE INTERFACE ADDRESSES 000-03F AVAILABLE
                                   55     *, THIS CSB HAS THE FOLLOWING DATA RATES
                                   56     *,  134 BPS
                                   57     *,  1200 BPS
                                   58     *,  2400 BPS
                                   59     *, THIS A TYPE1 CSB
                                   60     *, WRAP LINE ADDRESS IS 004 FOR MOD=0

51

                                   62 GRP1    GROUP CLOCKNG=INT,                                   C
                                                    INTPRI=0,                                      C
                                                    SPEED=134,                                     C
                                                    TERM=2740-1


                                   64     *,*****************************************
                                   65     *,                                         *
                                   66     *,            GROUP FEATURES               *
                                   67     *,                                         *
                                   68     *,*****************************************


                                   70     *,*D* THE LINES IN THIS GROUP ARE NONSWITCHED
                                   71     *,*D* THE LINES IN THIS GROUP ARE START/STOP
                                   72     *,*D* REPLY TIMEOUT IS 3.0 SECONDS
                                   73     *,*D* TEXT TIMEOUT IS 25.6 SECONDS
                                   74     *,*D* EOT FOR TWX TERMINALS IS TRANSMIT-ON, AND
                                   75     *,    TRANSMIT-OFF
                                   76     *,
                                   77     *,********* LINE CHARACTERISTICS *********
                                   78     *,
                                   79     *, CLOCKING FOR THIS GROUP OF LINES IS INTERNAL
                                   80     *, TERMINAL TYPE IS 2740-1
                                   81     *, LINE SPEED  134 BITS PER SECOND
                                   82     *, THE INTERRUPT PRIORITY FOR THIS LINE IS 0

                                   84 L1A42740 LINE ADDRESS=(004,0B0)
```

LOC OBJ CODE R1N1M R2N2 ADDR STMT SOURCE STATEMENT 18MAR72 9/07/72

```
                                  86               *,**************************************
                                  87               *,                                    *
                                  88               *,            LINE FEATURES           *
                                  89               *,                                    *
                                  90               *,**************************************


                                  92               *, LINE INTERFACE ADDRESS IS 004
                                  93               *, CHANNEL ADAPTER IS 0B0
                                  94               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  95               *,*G* CLOCKING FOR THIS LINE IS INTERNAL
                                  96               *,*G* LINE SPEED 134 BITS PER SECOND
                                  97               *, CSB OSCILLATOR SELECT ADDRESS- 00
                                  98               *,     OSCILLATOR RATE- 134 BITS PER SECOND
                                  99               *,*G* TERMINAL TYPE IS 2740-1
                                 100               *,*D* UNIT EXCEPTION WILL BE ISSUED UPON EOT
                                 101               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                 102               *,*D* OPTION2 MODEM TYPE
                                 103               *, NO SPECIAL FEATURES SPECIFIED
                                 104               *,*D*   NO IMMEDIATE END
                                 105               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                 106               *,*G* THE INTERRUPT PRIORITY FOR THIS LINE IS 0
                                 107               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                 108               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                 110 L1A52740 LINE ADDRESS=(005,0B1)

                                 112+          PUNCH 'CYACHVT  CSECT'
                                 113+          PUNCH '               ORG   2+CYACHVT+2*(X''0B0''-X''0B0'')'
                                 114+          PUNCH '         DC    R(CYALNVT+8+16*X''004'')'
                                 115+          PUNCH '$EP004 EPCCB SUBCHAN=X''B0'',TERM=X''80'',CODE=X''00'',X
                                   +                              X'
                                 116+          PUNCH '               LGT=$LGT1,OPTION1=00001000,              X
                                   +                            XXXXXXXX'
                                 117+          PUNCH '               MODEM=1,DIAL=0,UNITXC=1,                 X
                                   +                            X'
                                 118+          PUNCH '               INTPRI=0,                                X
                                   +                           XXXXX'
                                 119+          PUNCH '               OPTION2=00000100,LCD=X''44'',            X
                                   +                           XXXXX'
                                 120+          PUNCH '               CSBTYPE=0,LINEAD=004,DUPLEX=0,OSC=0'


                                 122               *,**************************************
                                 123               *,                                    *
                                 124               *,            LINE FEATURES           *
                                 125               *,                                    *
                                 126               *,**************************************


                                 128               *, LINE INTERFACE ADDRESS IS 005
                                 129               *, CHANNEL ADAPTER IS 0B1
                                 130               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72  9/07/72
                                  131               *,*G* CLOCKING FOR THIS LINE IS INTERNAL
                                  132               *,*G* LINE SPEED 134 BITS PER SECOND
                                  133               *, CSB OSCILLATOR SELECT ADDRESS- 00
                                  134               *,     OSCILLATOR RATE- 134 BITS PER SECOND
                                  135               *,*G* TERMINAL TYPE IS 2740-1
                                  136               *,*D* UNIT EXCEPTION WILL BE ISSUED UPON EOT
                                  137               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  138               *,*D* OPTION2 MODEM TYPE
                                  139               *, NO SPECIAL FEATURES SPECIFIED
                                  140               *,*D*   NO IMMEDIATE END
                                  141               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                  142               *,*G* THE INTERRUPT PRIORITY FOR THIS LINE IS 0
                                  143               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  144               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                  146 L1C62740 LINE ADDRESS=(006,0B2)

                                  148+          PUNCH 'CYACHVT  CSECT'
                                  149+          PUNCH '               ORG   2+CYACHVT+2*(X''0B1''-X''0B0'')'
                                  150+          PUNCH '          DC   R(CYALNVT+8+16*X''005'')'
                                  151+          PUNCH '$EP005 EPCCB SUBCHAN=X''B1'',TERM=X''80'',CODE=X''00'',X
                                    +                             X'
                                  152+          PUNCH '               LGT=$LGT1,OPTION1=00001000,             X
                                    +                            XXXXXXXX'
                                  153+          PUNCH '               MODEM=1,DIAL=0,UNITXC=1,                X
                                    +                            X'
                                  154+          PUNCH '               INTPRI=0,                               X
                                    +                           XXXXX'
                                  155+          PUNCH '               OPTION2=00000100,LCD=X''44'',           X
                                    +                            XXXXX'
                                  156+          PUNCH '               CSBTYPE=0,LINEAD=005,DUPLEX=0,OSC=0'

                                  158               *,**************************************
                                  159               *,                                    *
                                  160               *,            LINE FEATURES           *
                                  161               *,                                    *
                                  162               *,**************************************

                                  164               *, LINE INTERFACE ADDRESS IS 006
                                  165               *, CHANNEL ADAPTER IS 0B2
                                  166               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  167               *,*G* CLOCKING FOR THIS LINE IS INTERNAL
                                  168               *,*G* LINE SPEED 134 BITS PER SECOND
                                  169               *, CSB OSCILLATOR SELECT ADDRESS- 00
                                  170               *,     OSCILLATOR RATE- 134 BITS PER SECOND
                                  171               *,*G* TERMINAL TYPE IS 2740-1
                                  172               *,*D* UNIT EXCEPTION WILL BE ISSUED UPON EOT
                                  173               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  174               *,*D* OPTION2 MODEM TYPE
                                  175               *, NO SPECIAL FEATURES SPECIFIED
                                  176               *,*D*   NO IMMEDIATE END
```

```
LOC  OBJ CODE   RINIM R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/07/72
                                   177               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                   178               *,*G* THE INTERRUPT PRIORITY FOR THIS LINE IS 0
                                   179               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                   180               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                   182 L1C72740 LINE ADDRESS=(C07,0B3)

                                   184+          PUNCH 'CYACHVT  CSECT'
                                   185+          PUNCH '               ORG   2+CYACHVT+2*(X''0B2''-X''0B0'')'
                                   186+          PUNCH '          DC   R(CYALNVT+8+16*X''006'')'
                                   187+          PUNCH '$EP006 EPCCB SUBCHAN=X''B2'',TERM=X''80'',CODE=X''00'',X
                                     +                             X'
                                   188+          PUNCH '               LGT=$LGT1,OPTION1=00001000,              X
                                     +                            XXXXXXXX'
                                   189+          PUNCH '               MODEM=1,DIAL=0,UNITXC=1,                 X
                                     +                             X'
                                   190+          PUNCH '               INTPRI=0,                                X
                                     +                            XXXXX'
                                   191+          PUNCH '               OPTION2=00000100,LCD=X''44'',            X
                                     +                             XXXXX'
                                   192+          PUNCH '               CSBTYPE=0,LINEAD=006,DUPLEX=0,OSC=0'

                                   194               *,**************************************
                                   195               *,                                    *
                                   196               *,          LINE FEATURES             *
                                   197               *,                                    *
                                   198               *,**************************************

                                   200               *, LINE INTERFACE ADDRESS IS 007
                                   201               *, CHANNEL ADAPTER IS 0B3
                                   202               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                   203               *,*G* CLOCKING FOR THIS LINE IS INTERNAL
                                   204               *,*G* LINE SPEED 134 BITS PER SECOND
                                   205               *, CSB OSCILLATOR SELECT ADDRESS- 00
                                   206               *,     OSCILLATOR RATE- 134 BITS PER SECOND
                                   207               *,*G* TERMINAL TYPE IS 2740-1
                                   208               *,*D* UNIT EXCEPTION WILL BE ISSUED UPON EOT
                                   209               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                   210               *,*D* OPTION2 MODEM TYPE
                                   211               *, NO SPECIAL FEATURES SPECIFIED
                                   212               *,*D*   NO IMMEDIATE END
                                   213               *,*D*   LONGITUDINAL REDUNDANCY CHECK
                                   214               *,*G* THE INTERRUPT PRIORITY FOR THIS LINE IS 0
                                   215               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                   216               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                   218 GRP2     GROUP LNCTL=BSC,                                              C
                                                      DIAL=YES,                                               C
                                                      SPEED=2400,                                             C
                                                      TERM=2770
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/07/72

                              220+         PUNCH 'CYACHVT  CSECT'
                              221+         PUNCH '              ORG   2+CYACHVT+2*(X''0B3''-X''0B0'')'
                              222+         PUNCH '         DC    R(CYALNVT+8+16*X''007'')'
                              223+         PUNCH '$EP007 EPCCB SUBCHAN=X''B3'',TERM=X''80'',CODE=X''00'',X
                                 +                        X'
                              224+         PUNCH '              LGT=$LGT1,OPTION1=00001000,                X
                                 +                       XXXXXXXX'
                              225+         PUNCH '              MODEM=1,DIAL=0,UNITXC=1,                   X
                                 +                       X'
                              226+         PUNCH '              INTPRI=0,                                  X
                                 +                      XXXXX'
                              227+         PUNCH '              OPTION2=00000100,LCD=X''44'',              X
                                 +                      XXXXX'
                              228+         PUNCH '              CSBTYPE=0,LINEAD=007,DUPLEX=0,OSC=0'
                              229+         PUNCH '$LGT1 EPLGT DIAL=0,LNCTL=0,                              X
                                 +                      XXXXX'
                              230+         PUNCH '              CHAREC=(2),                                X
                                 +                      XXXXX'
                              231+         PUNCH '              REPLYTO=30,TEXTTO=256'


                              233                *,*************************************
                              234                *,                                   *
                              235                *,          GROUP FEATURES           *
                              236                *,                                   *
                              237                *,*************************************

                              239                *, THE LINES IN THIS GROUP ARE SWITCHED
                              240                *, THE LINES IN THIS GROUP ARE BINARY SYNCHRONOUS
                              241                *,*D* REPLY TIMEOUT IS 3.0 SECONDS
                              242                *,*D* TEXT TIMEOUT IS 25.6 SECONDS
                              243                *,
                              244                *,********* LINE CHARACTERISTICS *********
                              245                *,
                              246                *, TERMINAL TYPE IS 2770
                              247                *, LINE SPEED  2400 BITS PER SECOND

                              249 L1D02770 LINE ADDRESS=(000,0B4),                                       C
                                                AUTO=008

                              251                *,*************************************
                              252                *,                                   *
                              253                *,          LINE FEATURES            *
                              254                *,                                   *
                              255                *,*************************************

                              257                *, LINE INTERFACE ADDRESS IS 000
                              258                *, CHANNEL ADAPTER IS 0B4
                              259                *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                              260                *, AUTOCALL UNIT IS ON LINE ADDRESS 008
                              261                *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/07/72
                                  262               *,*G* LINE SPEED 2400 BITS PER SECOND
                                  263               *, CSB OSCILLATOR SELECT ADDRESS- 00
                                  264               *,     OSCILLATOR RATE- 134 BITS PER SECOND
                                  265               *,*G* TERMINAL TYPE IS 2770
                                  266               *,*D* EBCDIC TRANSMISSION CODE
                                  267               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  268               *,*D* OPTION2 MODEM TYPE
                                  269               *, NO SPECIAL FEATURES SPECIFIED
                                  270               *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  271               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  272               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                  274 L1D12770 LINE ADDRESS=(001,0B5),                                  C
                                                    AUTO=009

                                  276+          PUNCH 'CYACHVT  CSECT'
                                  277+          PUNCH '               ORG   2+CYACHVT+2*(X''0B4''-X''0B0'')'
                                  278+          PUNCH '          DC   R(CYALNVT+8+16*X''000'')'
                                  279+          PUNCH '$EP000 EPCCB SUBCHAN=X''B4'',TERM=X''00'',CODE=X''01'',X
                                    +                             X'
                                  280+          PUNCH '               LGT=$LGT2,OPTION1=10000100,             X
                                    +                            XXXXXXXX'
                                  281+          PUNCH '               MODEM=1,DIAL=1,UNITXC=1,                X
                                    +                            X'
                                  282+          PUNCH '               INTPRI=1,                               X
                                    +                           XXXXX'
                                  283+          PUNCH '               AUTOCAL=008,                            X
                                    +                            X'
                                  284+          PUNCH '               OPTION2=00000000,LCD=X''C4'',           X
                                    +                            XXXXX'
                                  285+          PUNCH '               CSBTYPE=0,LINEAD=000,DUPLEX=0,OSC=0'

                                  287               *,****************************************
                                  288               *,                                      *
                                  289               *,            LINE FEATURES             *
                                  290               *,                                      *
                                  291               *,****************************************

                                  293               *, LINE INTERFACE ADDRESS IS 001
                                  294               *, CHANNEL ADAPTER IS 0B5
                                  295               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  296               *, AUTOCALL UNIT IS ON LINE ADDRESS 009
                                  297               *,*D* CLOCKING FOR THIS LINE IS EXTERNAL
                                  298               *,*G* LINE SPEED 2400 BITS PER SECOND
                                  299               *, CSB OSCILLATOR SELECT ADDRESS- 00
                                  300               *,     OSCILLATOR RATE- 134 BITS PER SECOND
                                  301               *,*G* TERMINAL TYPE IS 2770
                                  302               *,*D* EBCDIC TRANSMISSION CODE
                                  303               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  304               *,*D* OPTION2 MODEM TYPE
                                  305               *, NO SPECIAL FEATURES SPECIFIED
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/07/72

                                306               *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                307               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                308               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL


                                310 GRP3     GROUP LNCTL=BSC,                                          C
                                                   CLOCKNG=INT,                                        C
                                                   SPEED=1200,                                         C
                                                   TERM=2770


                                312+          PUNCH 'CYACHVT  CSECT'
                                313+          PUNCH '               ORG   2+CYACHVT+2*(X''0B5''-X''0B0'')'
                                314+          PUNCH '          DC    R(CYALNVT+8+16*X''001'')'
                                315+          PUNCH '$EP001 EPCCB SUBCHAN=X''B5'',TERM=X''00'',CODE=X''01'',X
                                  +                              X'
                                316+          PUNCH '               LGT=$LGT2,OPTION1=10000100,                 X
                                  +                             XXXXXXXX'
                                317+          PUNCH '               MODEM=1,DIAL=1,UNITXC=1,                    X
                                  +                             X'
                                318+          PUNCH '               INTPRI=1,                                   X
                                  +                            XXXXX'
                                319+          PUNCH '               AUTOCAL=009,                                X
                                  +                             X'
                                320+          PUNCH '               OPTION2=00000000,LCD=X''C4'',               X
                                  +                             XXXXX'
                                321+          PUNCH '               CSBTYPE=0,LINEAD=001,DUPLEX=0,OSC=0'
                                322+          PUNCH '$LGT2 EPLGT DIAL=1,LNCTL=1,                                X
                                  +                            XXXXX'
                                323+          PUNCH '               REPLYTO=30,TEXTTO=256'


                                325               *,*************************************
                                326               *,                                   *
                                327               *,          GROUP FEATURES           *
                                328               *,                                   *
                                329               *,*************************************


                                331               *,*D* THE LINES IN THIS GROUP ARE NONSWITCHED
                                332               *, THE LINES IN THIS GROUP ARE BINARY SYNCHRONOUS
                                333               *,*D* REPLY TIMEOUT IS 3.0 SECONDS
                                334               *,*D* TEXT TIMEOUT IS 25.6 SECONDS
                                335               *,
                                336               *,******** LINE CHARACTERISTICS *********
                                337               *,
                                338               *, CLOCKING FOR THIS GROUP OF LINES IS INTERNAL
                                339               *, TERMINAL TYPE IS 2770
                                340               *, LINE SPEED  1200 BITS PER SECOND


                                342 L1F22770 LINE ADDRESS=(002,0B6)


                                344               *,*************************************
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/07/72
                                  345               *,                                    *
                                  346               *,          LINE FEATURES             *
                                  347               *,                                    *
                                  348               *,************************************

                                  350               *, LINE INTERFACE ADDRESS IS 002
                                  351               *, CHANNEL ADAPTER IS 0B6
                                  352               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  353               *,*G* CLOCKING FOR THIS LINE IS INTERNAL
                                  354               *,*G* LINE SPEED 1200 BITS PER SECOND
                                  355               *, CSB OSCILLATOR SELECT ADDRESS- 01
                                  356               *,     OSCILLATOR RATE- 1200 BITS PER SECOND
                                  357               *,*G* TERMINAL TYPE IS 2770
                                  358               *,*D* EBCDIC TRANSMISSION CODE
                                  359               *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  360               *,*D* OPTION2 MODEM TYPE
                                  361               *, NO SPECIAL FEATURES SPECIFIED
                                  362               *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  363               *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  364               *,*D* THE SUBCHANNEL PRIORITY IS NORMAL

                                  366 L1F32770 LINE ADDRESS=(003,0B7)

                                  368+          PUNCH 'CYACHVT  CSECT'
                                  369+          PUNCH '               ORG   2+CYACHVT+2*(X''0B6''-X''0B0'')'
                                  370+          PUNCH '          DC   R(CYALNVT+8+16*X''002'')'
                                  371+          PUNCH '$EP002 EPCCB SUBCHAN=X''B6'',TERM=X''00'',CODE=X''01'',X
                                    +                             X'
                                  372+          PUNCH '               LGT=$LGT3,OPTION1=00001100,             X
                                    +                           XXXXXXXX'
                                  373+          PUNCH '               MODEM=1,DIAL=0,UNITXC=1,                X
                                    +                           X'
                                  374+          PUNCH '               INTPRI=1,                               X
                                    +                           XXXXX'
                                  375+          PUNCH '               OPTION2=00000000,LCD=X''C4'',           X
                                    +                           XXXXX'
                                  376+          PUNCH '               CSBTYPE=0,LINEAD=002,DUPLEX=0,OSC=1'

                                  378               *,************************************
                                  379               *,                                    *
                                  380               *,          LINE FEATURES             *
                                  381               *,                                    *
                                  382               *,************************************

                                  384               *, LINE INTERFACE ADDRESS IS 003
                                  385               *, CHANNEL ADAPTER IS 0B7
                                  386               *,*D* THE CONTROL UNIT FOR THIS LINE IS A 2703
                                  387               *,*G* CLOCKING FOR THIS LINE IS INTERNAL
                                  388               *,*G* LINE SPEED 1200 BITS PER SECOND
                                  389               *, CSB OSCILLATOR SELECT ADDRESS- 01
```

```
LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/07/72

                                  390              *,     OSCILLATOR RATE- 1200 BITS PER SECOND
                                  391              *,*G* TERMINAL TYPE IS 2770
                                  392              *,*D* EBCDIC TRANSMISSION CODE
                                  393              *,*D* THE PCCU IS NOT A TRIBUTARY STATION ON THIS LINE
                                  394              *,*D* OPTION2 MODEM TYPE
                                  395              *, NO SPECIAL FEATURES SPECIFIED
                                  396              *,*D* THE INTERRUPT PRIORITY FOR THIS LINE IS 1
                                  397              *,*D* HALF DUPLEX COMMUNICATIONS LINE
                                  398              *,*D* THE SUBCHANNEL PRIORITY IS NORMAL


                                  400 FINI     GENEND

                                  402              *,****************************************
                                  403              *,                                      *
                                  404              *,          END OF GENERATION           *
                                  405              *,                                      *
                                  406              *,****************************************

                                  408+         PUNCH 'CYACHVT  CSECT'
                                  409+         PUNCH '                ORG   2+CYACHVT+2*(X''0B7''-X''0B0'')'
                                  410+         PUNCH '          DC    R(CYALNVT+8+16*X''003'')'
                                  411+         PUNCH '$EP003 EPCCB SUBCHAN=X''B7'',TERM=X''00'',CODE=X''01'',X
                                    +                              X'
                                  412+         PUNCH '                LGT=$LGT3,OPTION1=00001100,             X
                                    +                             XXXXXXXX'
                                  413+         PUNCH '                MODEM=1,DIAL=0,UNITXC=1,                X
                                    +                             X'
                                  414+         PUNCH '                INTPRI=1,                               X
                                    +                              XXXXX'
                                  415+         PUNCH '                OPTION2=00000000,LCD=X''C4'',           X
                                    +                             XXXXX'
                                  416+         PUNCH '                CSBTYPE=0,LINEAD=003,DUPLEX=0,OSC=1'
                                  417+         PUNCH '$LGT3 EPLGT DIAL=0,LNCTL=1,                             X
                                    +                             XXXXX'
                                  418+         PUNCH '                REPLYTO=30,TEXTTO=256'



                                  421+         PUNCH 'CYACHVT   CSECT'
                                  422+         PUNCH '          ORG   CYAWRAP'
                                  423+         PUNCH '          DC    R(CYALNVT+16*X''004''+8)    LINE 1'
                                  424+         PUNCH 'CYASCAN   EQU   *'
                                  425+         PUNCH '          ENTRY CYASCAN'
                                  426+         PUNCH '          DC    AL1(128*1+0)'
                                  427+         PUNCH '          DC    AL1(128*0+0)'
                                  428+         PUNCH '          DC    AL1(128*0+0)'
                                  429+         PUNCH '          DC    AL1(128*0+0)'
                                  430+         PUNCH '          DC    B''00000000'''
                                  431+         PUNCH '          END'
                                  432+         PUNCH '/*'
                                  433+         PUNCH '//S2 EXEC PGM=IEWL,PARM=''LIST,LET,DC,NCAL,XREF'''
                                  434+         PUNCH '//SYSLIB DD DSN=SYS1.EPOBJECT,DISP=SHR'
                                  435+         PUNCH '//SYSLMOD DD DSN=&&&&PCUTEMP,DISP=(,PASS),SPACE=(TRK,(2X
```

LOC OBJ CODE R1N1M R2N2 ADDR STMT SOURCE STATEMENT 18MAR72 9/07/72

```
                                      +              5,10,2)),        XXX'
                                     436+          PUNCH '//              UNIT=2314'
                                     437+          PUNCH '//SYSPRINT DD SYSOUT=A'
                                     438+          PUNCH '//SYSUT1 DD UNIT=2314,SPACE=(1024,(50,20))'
                                     439+          PUNCH '//SYSLIN DD *'
                                     440+          PUNCH ' REPLACE CYAEPCCB'
                                     441+          PUNCH ' REPLACE CYAEPLGT'
                                     442+          PUNCH ' REPLACE CYACHVT'
                                     443+          PUNCH ' INCLUDE SYSLIB(FEEDEPBF)'
                                     444+          PUNCH ' NAME CYALNVT'
                                     445+          PUNCH ' REPLACE CYAEPCCB'
                                     446+          PUNCH ' REPLACE CYAEPLGT'
                                     447+          PUNCH ' REPLACE CYALNVT'
                                     448+          PUNCH ' INCLUDE SYSLIB(FEEDEPBF)'
                                     449+          PUNCH ' NAME CYACHVT'
                                     450+          PUNCH ' REPLACE CYAEPCCB'
                                     451+          PUNCH ' REPLACE CYALNVT'
                                     452+          PUNCH ' REPLACE CYACHVT'
                                     453+          PUNCH ' INCLUDE SYSLIB(FEEDEPBF)'
                                     454+          PUNCH ' NAME CYAEPLGT'
                                     455+          PUNCH ' REPLACE CYAEPLGT'
                                     456+          PUNCH ' REPLACE CYACHVT'
                                     457+          PUNCH ' REPLACE CYALNVT'
                                     458+          PUNCH ' INCLUDE SYSLIB(FEEDEPBF)'
                                     459+          PUNCH ' NAME CYAEPCCB'
                                     460+          PUNCH '/*'
                                     461+          PUNCH '//S2 EXEC PGM=IEWL,PARM=''LIST,LET,DC,NCAL,XREF'''
                                     462+          PUNCH '//03705 DD DSN=SYS1.OBJ3705,DISP=SHR'
                                     463+          PUNCH '//SYSLIB DD DSN=SYS1.EPOBJECT,DISP=SHR'
                                     464+          PUNCH '//SYSLMOD DD DSN=SYS1.EPDTASET,DISP=OLD'
                                     465+          PUNCH '//SYSPRINT DD SYSOUT=A'
                                     466+          PUNCH '//TEMP DD DSN=&&&&PCUTEMP,DISP=(OLD,PASS)'
                                     467+          PUNCH '//SYSUT1 DD UNIT=2314,SPACE=(1024,(50,20))'
                                     468+          PUNCH '//SYSLIN DD *'
                                     469+          PUNCH ' INCLUDE 03705(CYANUC10)'
                                     470+          PUNCH ' INCLUDE TEMP(CYALNVT)'
                                     471+          PUNCH ' INCLUDE TEMP(CYACHVT)'
                                     472+          PUNCH ' INCLUDE TEMP(CYAEPCCB)'
                                     473+          PUNCH ' INCLUDE TEMP(CYAEPLGT)'
                                     474+          PUNCH ' INCLUDE 03705(CYASVC10)'
                                     475+          PUNCH ' INCLUDE 03705(CYASIS10)'
                                     476+          PUNCH ' INCLUDE 03705(CYASL110)'
                                     477+          PUNCH ' INCLUDE 03705(CYABIS10)'
                                     478+          PUNCH ' INCLUDE 03705(CYABL110)' EBCDIC
                                     479+          PUNCH ' INCLUDE 03705(CYABIT30)'
                                     480+          PUNCH ' INCLUDE 03705(CYATRC10)'
                                     481+          PUNCH ' ENTRY CYASTART'
                                     482+          PUNCH ' NAME FEEDEPBF(R)'
                                     483+          PUNCH '/*'
                                     484    END
```

60

NO STATEMENTS FLAGGED IN THIS ASSEMBLY
STATISTICS SOURCE RECORDS (SYSIN) = 33 SOURCE RECORDS (SYSLIB) = 6169
OPTIONS IN EFFECT LIST, DECK, NOLOAD, NORENT, XREF, LINECNT = 55
532 PRINTED LINES

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   SYS1.MAC3705                                    KEPT
IEF285I   VOL SER NOS= MVT210.
IEF285I   SYS72251.T043107.RV000.RC3705A.R0000001         DELETED
IEF285I   VOL SER NOS= MVTLNK.
IEF285I   SYS72251.T043107.RV000.RC3705A.R0000002         DELETED
IEF285I   VOL SER NOS= MVTLNK.
IEF285I   SYS72251.T043107.RV000.RC3705A.R0000003         DELETED
IEF285I   VOL SER NOS= SYSADM.
IEF285I   SYS72251.T043107.SV000.RC3705A.R0000004         SYSOUT
IEF285I   VOL SER NOS= SYSADM.
IEF285I   SYS72251.T043107.SV000.RC3705A.R0000005         SYSOUT
IEF285I   VOL SER NOS= SYSLNG.
IEF285I   SYS72251.T043107.RV000.RC3705A.S0000006         SYSIN
IEF285I   VOL SER NOS= SPOOL1.
IEF285I   SYS72251.T043107.RV000.RC3705A.S0000006         DELETED
IEF285I   VOL SER NOS= SPOOL1.
```

STAGE 2 ASSEMBLY
of
FEEDEPBF
(CS-1)

```
//EPGEN JOB (IFG,G96,060,1),PGMRNME,MSGLEVEL=(1,1)
//S1 EXEC PGM=IFKASM,PARM='DECK'
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSUT2 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSUT3 DD UNIT=2314,SPACE=(1700,(400,50))
//SYSLIB DD DSN=SYS1.MAC3705,DISP=SHR
//SYSPUNCH DD DSN=SYS1.EPOBJECT(FEEDEPBF),DISP=OLD
//SYSIN DD *
IEF236I ALLOC. FOR EPGEN    S1
IEF237I 133    ALLOCATED TO SYSPRINT
IEF237I 137    ALLOCATED TO SYSUT1
IEF237I 130    ALLOCATED TO SYSUT2
IEF237I 131    ALLOCATED TO SYSUT3
IEF237I 137    ALLOCATED TO SYSLIB
IEF237I 137    ALLOCATED TO SYSPUNCH
IEF237I 130    ALLOCATED TO SYSIN
```

SYMBOL	TYPE	ID	ADDR	LENGTH	LD ID
CYALNVT	SD	01	000000	0000A8	
CYACHVT	SD	02	0000A8	000018	
CYAWRAP	LD		0000BC		02
CYACHEND	LD		0000BA		02
CYACHVTP	LD		000742		02
CYAEPCCB	SD	03	0000C8	000128	
CYAEPLGT	SD	04	0001F0	000018	
CYASCAN	LD		0000BE		02

```
 LOC  OBJ CODE  R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                                    18MAR72   9/07/72
000000                                1 CYALNVT  CSECT
000000 0000000000000000               2          DC    2F'0'
0000A8                                3 CYACHVT  CSECT
000742                                4 CYACHVTP EQU *-2*176+X'7FA'
                                      5          ENTRY CYAWRAP,CYACHEND,CYACHVTP
0000A8 B0                             6          DC    AL1(176)
0000A9 B7                             7          DC    AL1(183)
0000AA                                8          DS    (183-176+1)H
0000BA 0001                           9           DC    X'0001'
0000BA                               10 CYACHEND EQU *-2
0000BC                               11 CYAWRAP  EQU   *
0000A8                               12 CYACHVT  CSECT
0000AA                               13                ORG   2+CYACHVT+2*(X'0B0'-X'0B0')
0000AA 0048                          14          DC    R(CYALNVT+8+16*X'004')
                                     15 $EP004 EPCCB SUBCHAN=X'B0',TERM=X'80',CODE=X'00',                    X
                                                     LGT=$LGT1,OPTION1=00001000,                           XXXXXXXX
                                                     MODEM=1,DIAL=0,UNITXC=1,                               X
                                                     INTPRI=0,                                             XXXXX
                                                     OPTION2=00000100,LCD=X'44',                           XXXXX
                                                     CSBTYPE=0,LINEAD=004,DUPLEX=0,DSC=0
000000                               16+CYALNVT  CSECT
000048                               17+         ORG   CYALNVT+16*X'004'+8
000048 00C8                          18+         DC    R($EP004) .          CCB ADDRESS
00004A 0000                          19+         DC    H'0'
00004C 0000                          20+         DC    H'0'
00004E 0000                          21+         DC    H'0'
000050 0000                          22+         DC    H'0'
000052 0000                          23+         DC    H'0' SDF
000054 0080                          24+         DC    X'0080' .
000056 20                            25+         DC    X'20' .
000057 01                            26+         DC    X'01' .
0000C8                               27+CYAEPCCB CSECT
0000C8                               28+         DS    0H .
0000C8                               29+$EP004   EQU   *
0000C8 0000000000000000              30+         DC    4H'0' .            DATA BUFFERS 0 AND 1.
0000D0 0000                          31+         DC    AL2(0) .           SERVICE QJEUE ELEMENT, CHAIN ADDRESS
0000D2 0000                          32+         DC    AL2(0) .           STATUS OUT QJEUE ELEMENT, CHAIN ADDR
0000D4 B0                            33+         DC    X'B0' .          SUBCHANNEL  ADDRESS
0000D5 80                            34+         DC    X'80' .      TYP1 CSB LCD CODE
0000D6 0000                          35+         DC    H'0'
0000D8 04                            36+         DC    X'04'
0000D9 0000000000                    37+         DC    5X'0'
0000DE 0000                          38+         DC    AL2(0) .           ADDRESS OF TIMER ROUTINE
0000E0 0000                          39+         DC    AL2(0) .           INTERRUPT ADDRESS
                                     40+*                                  OPT FIELD FOLLOWS
0000E2 00                            41+         DC    BL1'00000000' OPT
0000E3 98                            42+         DC    BL1'10011000' SECOND OPTION
0000E4 80                            43+         DC    BL1'10000000' .     STMOD
0000E5 40                            44+         DC    AL1((X'44'/16)*16) .     LINE CONTROL DEFINITION FIELD
0000E6 00                            45+         DC    AL1(0) .           LRC
0000E7 8C                            46+         DC    BL1'10001100' START/STOP CTL
0000E8 01FC                          47+         DC    R($LGT1) .          ADDRESS OF LINE GROUP TABLE
0000A8                               48 CYACHVT  CSECT
0000AC                               49                ORG   2+CYACHVT+2*(X'0B1'-X'0B0')
0000AC 0058                          50          DC    R(CYALNVT+8+16*X'005')
```

```
                                    51 $EP005 EPCCB SUBCHAN=X'B1',TERM=X'80',CODE=X'00',                X
                                                    LGT=$LGT1,OPTION1=00001000,                      XXXXXXXX
                                                    MODEM=1,DIAL=0,UNITXC=1,                            X
                                                    INTPRI=0,                                        XXXXX
                                                    OPTION2=00000100,LCD=X'44',                      XXXXX
                                                    CSBTYPE=0,LINEAD=005,DUPLEX=0,OSC=0
000000                              52+CYALNVT  CSECT
000058                              53+         ORG   CYALNVT+16*X'005'+8
000058 00EA                         54+         DC    R($EP005) .          CCB ADDRESS
00005A 0000                         55+         DC    H'0'
00005C 0000                         56+         DC    H'0'
00005E 0000                         57+         DC    H'0'
000060 0000                         58+         DC    H'0'
000062 0000                         59+         DC    H'0' SDF
000064 0080                         60+         DC    X'0080' .
000066 20                           61+         DC    X'20' .
000067 01                           62+         DC    X'01' .
0000C8                              63+CYAEPCCB CSECT
0000EA                              64+         DS    0H .
0000EA                              65+$EP005   EQU   *
0000EA 0000000000000000             66+         DC    4H'0' .              DATA BUFFERS 0 AND 1.
0000F2 0000                         67+         DC    AL2(0) .             SERVICE QUEUE ELEMENT, CHAIN ADDRESS
0000F4 0000                         68+         DC    AL2(0) .             STATUS OUT QUEUE ELEMENT, CHAIN ADDR
0000F6 B1                           69+         DC    X'B1' .            SUBCHANNEL  ADDRESS
0000F7 80                           70+         DC    X'80' .       TYP1 CSB LCD CODE
0000F8 0000                         71+         DC    H'0'
0000FA 04                           72+         DC    X'04'
0000FB 0000000000                   73+         DC    5X'0'
000100 0000                         74+         DC    AL2(0) .             ADDRESS OF TIMER ROUTINE
000102 0000                         75+         DC    AL2(0) .             INTERRUPT ADDRESS
                                    76+*                                   OPT FIELD FOLLOWS
000104 00                           77+         DC    BL1'00000000' OPT
000105 98                           78+         DC    BL1'10011000' SECOND OPTION
000106 80                           79+         DC    BL1'10000000' .      STMOD
000107 40                           80+         DC    AL1((X'44'/16)*16) .     LINE CONTROL DEFINITION FIELD
000108 00                           81+         DC    AL1(0) .             LRC
000109 8C                           82+         DC    BL1'10001100' START/STOP CTL
00010A 01FC                         83+         DC    R($LGT1) .            ADDRESS OF LINE GROUP TABLE
0000A8                              84 CYACHVT  CSECT
0000AE                              85          ORG   2+CYACHVT+2*(X'0B2'-X'0B0')
0000AE 0068                         86          DC    R(CYALNVT+8+16*X'006')
                                    87 $EP006 EPCCB SUBCHAN=X'B2',TERM=X'80',CODE=X'00',                X
                                                    LGT=$LGT1,OPTION1=00001000,                      XXXXXXXX
                                                    MODEM=1,DIAL=0,UNITXC=1,                            X
                                                    INTPRI=0,                                        XXXXX
                                                    OPTION2=00000100,LCD=X'44',                      XXXXX
                                                    CSBTYPE=0,LINEAD=006,DUPLEX=0,OSC=0
000000                              88+CYALNVT  CSECT
000068                              89+         ORG   CYALNVT+16*X'006'+8
000068 010C                         90+         DC    R($EP006) .          CCB ADDRESS
00006A 0000                         91+         DC    H'0'
00006C 0000                         92+         DC    H'0'
00006E 0000                         93+         DC    H'0'
000070 0000                         94+         DC    H'0'
000072 0000                         95+         DC    H'0' SDF
```

```
 LOC  OBJ CODE   R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                                18MAR72   9/07/72
000074 0080                          96+          DC    X'0080' .
000076 20                            97+          DC    X'20' .
000077 01                            98+          DC    X'01' .
0000C8                               99+CYAEPCCB  CSECT
00010C                              100+          DS    0H .
00010C                              101+$EP006    EQU   *
00010C 0000000000000000             102+          DC    4H'0' .              DATA BUFFERS 0 AND 1.
000114 0000                         103+          DC    AL2(0) .             SERVICE QUEUE ELEMENT, CHAIN ADDRESS
000116 C000                         104+          DC    AL2(0) .             STATUS OUT QUEUE ELEMENT, CHAIN ADDR
000118 B2                           105+          DC    X'B2' .          SUBCHANNEL  ADDRESS
000119 80                           106+          DC    X'80' .      TYP1 CSB LCD CODE
00011A 0000                         107+          DC    H'0'
00011C 04                           108+          DC    X'04'
00011D 0000000000                   109+          DC    5X'0'
000122 0000                         110+          DC    AL2(0) .             ADDRESS OF TIMER ROUTINE
000124 0000                         111+          DC    AL2(0) .             INTERRUPT ADDRESS
                                    112+*                                    OPT FIELD FOLLOWS
000126 00                           113+          DC    BL1'00000000' OPT
000127 98                           114+          DC    BL1'10011000' SECOND OPTION
000128 80                           115+          DC    BL1'10000000' .      STMOD
000129 40                           116+          DC    AL1((X'44'/16)*16) .     LINE CONTROL DEFINITION FIELD
00012A 00                           117+          DC    AL1(0) .             LRC
00012B 8C                           118+          DC    BL1'10001100' START/STOP CTL
00012C 01F0                         119+          DC    R($LGT1) .           ADDRESS OF LINE GROUP TABLE
0000A8                              120 CYACHVT   CSECT
0000B0                              121           ORG   2+CYACHVT+2*(X'0B3'-X'0B0')
0000BC 0078                         122           DC    R(CYALNVT+8+16*X'007')
                                    123 $EP007 EPCCB SUBCHAN=X'B3',TERM=X'80',CODE=X'00',                    X
                                                 LGT=$LGT1,OPTION1=00001000,                               XXXXXXXX
                                                 MODEM=1,DIAL=0,UNITXC=1,                                  X
                                                 INTPRI=0,                                                 XXXXX
                                                 OPTION2=00000100,LCD=X'44',                               XXXXX
                                                 CSBTYPE=0,LINEAD=007,DUPLEX=0,OSC=0
000000                              124+CYALNVT   CSECT
000078                              125+          ORG   CYALNVT+16*X'007'+8
000078 012E                         126+          DC    R($EP007) .            CCB ADDRESS
00007A 0000                         127+          DC    H'0'
00007C 0000                         128+          DC    H'0'
00007E 0000                         129+          DC    H'0'
000080 0000                         130+          DC    H'0'
000082 0000                         131+          DC    H'0' SDF
000084 0080                         132+          DC    X'0080' .
000086 20                           133+          DC    X'20' .
000087 01                           134+          DC    X'01' .
0000C8                              135+CYAEPCCB  CSECT
00012E                              136+          DS    0H .
00012E                              137+$EP007    EQU   *
00012E 0000000000000000             138+          DC    4H'0' .              DATA BUFFERS 0 AND 1.
000136 0000                         139+          DC    AL2(0) .             SERVICE QUEUE ELEMENT, CHAIN ADDRESS
000138 0000                         140+          DC    AL2(0) .             STATUS OUT QUEUE ELEMENT, CHAIN ADDR
00013A B3                           141+          DC    X'B3' .          SUBCHANNEL  ADDRESS
00013B 80                           142+          DC    X'80' .      TYP1 CSB LCD CODE
00013C 0000                         143+          DC    H'0'
00013E 04                           144+          DC    X'04'
00013F 0000000000                   145+          DC    5X'0'
```

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 LOC  OBJ CODE  R1V1M R2V2 ADDR   STMT   SOURCE STATEMENT                                                    18MAR72  9/07/72

000144 0000                      146+          DC    AL2(0) .            ADDRESS OF TIMER ROUTINE
000146 0000                      147+          DC    AL2(0) .            INTERRUPT ADDRESS
                                 148+*                                   OPT FIELD FOLLOWS
000148 00                        149+          DC    BL1'00000000' OPT
000149 98                        150+          DC    BL1'10011000' SECOND OPTION
00014A 80                        151+          DC    BL1'10000000' .     STMOD
00014B 40                        152+          DC    AL1((X'44'/16)*16) .     LINE CONTROL DEFINITION FIELD
00014C 00                        153+          DC    AL1(0) .            LRC
00014D 8C                        154+          DC    BL1'10001100' START/STOP CTL
00014E 01F0                      155+          DC    R($LGT1) .           ADDRESS OF LINE GROUP TABLE
                                 156 $LGT1 EPLGT DIAL=0,LNCTL=0,                                          XXXXX
                                                 CHAREC=(2),                                              XXXXX
                                                 REPLYTO=30,TEXTTO=256
0001F0                           157+CYAEPLGT CSECT
0001F0                           158+          DS    0H
0001F0                           159+$LGT1     EQU   *
0001F0 0F                        160+          DC    AL1(30/2) TIME IN TENTHS OF SECONDS
0001F1 80                        161+          DC    AL1(256/2) TIME IN TENTHS OF SECONDS
0001F2 00                        162+          DC    AL1(0)
0001F3 00                        163+          DC    AL1(0)
0001F4 10                        164+          DC    BL1'00010000'
0001F5 000000                    165+          DC    AL3(0) .
0000A8                           166 CYACHVT   CSECT
0000B2                           167                 ORG   2+CYACHVT+2*(X'0B4'-X'080')
0000B2 0008                      168           DC    R(CYALNVT+8+16*X'000')
                                 169 $EP000 EPCCB SUBCHAN=X'B4',TERM=X'00',CODE=X'01',                      X
                                                 LGT=$LGT2,OPTION1=10000100,                              XXXXXXXX
                                                 MODEM=1,DIAL=1,UNITXC=1,                                   X
                                                 INTPRI=1,                                                XXXXX
                                                 AUTOCAL=008,                                               X
                                                 OPTION2=00000000,LCD=X'C4',                              XXXXX
                                                 CSBTYPE=0,LINEAD=000,DUPLEX=0,OSC=0
000000                           170+CYALNVT   CSECT
000008                           171+          ORG   CYALNVT+16*X'000'+8
000008 015C                      172+          DC    R($EP000) .           CCB ADDRESS
00000A 0000                      173+          DC    H'0'
00000C 0000                      174+          DC    H'0'
00000E 0000                      175+          DC    H'0'
000010 0000                      176+          DC    H'0'
000012 0000                      177+          DC    H'0' SDF
000014 0100                      178+          DC    X'0100' .
000016 32                        179+          DC    X'32' .
000017 00                        180+          DC    X'00' .
000000                           181+CYALNVT   CSECT
000088                           182+          ORG   CYALNVT+16*X'008'+8
000088 0150                      183+          DC    R($EP000) .                CCB ADDRESS
00008A 0000                      184+          DC    H'0'
00008C 0000                      185+          DC    H'0'
00008E 0000                      186+          DC    H'0'
000090 0000                      187+          DC    H'0'
000092 0000                      188+          DC    H'0'
000094 0000                      189+          DC    X'0000' BCB MASK
000096 00                        190+          DC    X'00'
000097 00                        191+          DC    X'00'
000008                           192+CYAEPCCB  CSECT
```

```
000150                                193+          DS    0H .
000150                                194+$EP000    EQU   *
000150 0000000000000000               195+          DC    4H'0' .                 DATA BUFFERS 0 AND 1.
000158 0000                           196+          DC    AL2(0) .                SERVICE QJEJE ELEMENT, CHAIN ADDRESS
00015A 0000                           197+          DC    AL2(0) .                STATUS OUT QUEUE ELEMENT, CHAIN ADDR
00015C B4                             198+          DC    X'B4' .              SUBCHANNEL  ADDRESS
00015D A0                             199+          DC    X'A0' .        TYP1 CSB LCD CODE
00015E 0000                           200+          DC    H'0'
000160 04                             201+          DC    X'04'
000161 0000000000                     202+          DC    5X'0'
000166 0000                           203+          DC    AL2(0) .                ADDRESS OF TIMER ROUTINE
000168 0000                           204+          DC    AL2(0) .                INTERRUPT ADDRESS
                                      205+*                                       OPT FIELD FOLLOWS
00016A 89                             206+          DC    BL1'10001001' OPT
00016B 18                             207+          DC    BL1'00011000' SECOND OPTION
00016C 18                             208+          DC    BL1'00011000' .         STMOD
00016D C0                             209+          DC    AL1((X'C4'/16)*16) .       LINE CONTROL DEFINITION FIELD
00016E 0000                           210+          DC    AL2(0) .                BCC
000170 32                             211+          DC    X'32' EBCDIC  SYN
000171 37                             212+          DC    X'37' EBCDIC  EOT
000172 0880                           213+          DC    AL2(16*X'008'+X'800')
000174 0000                           214+          DC    AL2(0) .                L2A1. SUBRTN ADDRESS
000176 00                             215+          DC    BL1'00000000' FLAG BYTE 1
000177 00                             216+          DC    BL1'00000000' FLAG BYTE 2
0000A8                                217 CYACHVT   CSECT
000084                                218           ORG   2+CYACHVT+2*(X'0B5'-X'0B0')
0000B4 0018                           219           DC    R(CYALNVT+8+16*X'001')
                                      220 $EP001 EPCCB SUBCHAN=X'B5',TERM=X'00',CODE=X'01',                              X
                                                     LGT=$LGT2,OPTION1=10000100,                                      XXXXXXXX
                                                     MODEM=1,DIAL=1,UNITXC=1,                                           X
                                                     INTPRI=1,                                                        XXXXX
                                                     AUTOCAL=009,                                                       X
                                                     OPTION2=00000000,LCD=X'C4',                                      XXXXX
                                                     CSBTYPE=0,LINEAD=001,DUPLEX=0,OSC=0
000000                                221+CYALNVT   CSECT
000018                                222+          ORG   CYALNVT+16*X'001'+8
000018 0178                           223+          DC    R($EP001) .             CCB ADDRESS
00001A 0000                           224+          DC    H'0'
00001C 0000                           225+          DC    H'0'
00001E 0000                           226+          DC    H'0'
000020 0000                           227+          DC    H'0'
000022 0000                           228+          DC    H'0' SDF
000024 0100                           229+          DC    X'0100' .
000026 32                             230+          DC    X'32' .
000027 00                             231+          DC    X'00' .
000000                                232+CYALNVT   CSECT
000098                                233+          ORG   CYALNVT+16*X'009'+8
000098 0178                           234+          DC    R($EP001) .                CCB ADDRESS
00009A 0000                           235+          DC    H'0'
00009C 0000                           236+          DC    H'0'
00009E 0000                           237+          DC    H'0'
0000A0 0000                           238+          DC    H'0'
0000A2 0000                           239+          DC    H'0'
0000A4 0000                           240+          DC    X'0000' BCB MASK
0000A6 00                             241+          DC    X'00'
```

```
0000A7 00                          242+          DC    X'00'
0000C8                             243+CYAEPCCB  CSECT
000178                             244+          DS    0H .
000178                             245+$EP001    EQU   *
000178 0000C00000000000            246+          DC    4H'0' .              DATA BUFFERS 0 AND 1.
000180 0000                        247+          DC    AL2(0) .             SERVICE QUEUE ELEMENT, CHAIN ADDRESS
000182 0000                        248+          DC    AL2(0) .             STATUS OUT QUEUE ELEMENT, CHAIN ADDR
000184 B5                          249+          DC    X'B5' .          SUBCHANNEL  ADDRESS
000185 A0                          250+          DC    X'A0' .      TYP1 CSB LCD CODE
000186 0000                        251+          DC    H'0'
000188 04                          252+          DC    X'04'
000189 0000000000                  253+          DC    5X'0'
00018E 0000                        254+          DC    AL2(0) .             ADDRESS OF TIMER ROUTINE
000190 0000                        255+          DC    AL2(0) .             INTERRUPT ADDRESS
                                   256+*                                    OPT FIELD FOLLOWS
000192 89                          257+          DC    BL1'10001001' OPT
000193 18                          258+          DC    BL1'00011000' SECOND OPTION
000194 18                          259+          DC    BL1'00011000' .      STMOD
000195 C0                          260+          DC    AL1((X'C4'/16)*16) .     LINE CONTROL DEFINITION FIELD
000196 0000                        261+          DC    AL2(0) .             BCC
000198 32                          262+          DC    X'32' EBCDIC  SYN
000199 37                          263+          DC    X'37' EBCDIC  EOT
00019A 0890                        264+          DC    AL2(16*X'009'+X'800')
00019C 0000                        265+          DC    AL2(0) .             L2A1. SUBRTN ADDRESS
00019E 00                          266+          DC    BL1'00000000' FLAG BYTE 1
00019F 00                          267+          DC    BL1'00000000' FLAG BYTE 2
                                   268 $LGT2 EPLGT DIAL=1,LNCTL=1,                                          XXXXX
                                                   REPLYTO=30,TEXTTO=256
0001F0                             269+CYAEPLGT  CSECT
0001F8                             270+          DS    0H
0001F8                             271+$LGT2     EQU   *
0001F8 0F                          272+          DC    AL1(30/2) TIME IN TENTHS OF SECONDS
0001F9 80                          273+          DC    AL1(256/2) TIME IN TENTHS OF SECONDS
0001FA 00                          274+          DC    AL1(0)
0001FB C0                          275+          DC    AL1(0)
0001FC 1C                          276+          DC    BL1'00011100'
0001FD 000000                      277+          DC    AL3(0) .
0000A8                             278 CYACHVT   CSECT
0000B6                             279           ORG   2+CYACHVT+2*(X'0B6'-X'0B0')
0000B6 0028                        280           DC    R(CYALNVT+8+16*X'002')
                                   281 $EP002 EPCCB SUBCHAN=X'B6',TERM=X'00',CODE=X'01',                      X
                                                   LGT=$LGT3,OPTION1=00001100,                              XXXXXXXX
                                                   MODEM=1,DIAL=0,UNITXC=1,                                   X
                                                   INTPRI=1,                                                XXXXX
                                                   OPTION2=00000000,LCD=X'C4',                              XXXXX
                                                   CSBTYPE=0,LINEAD=002,DUPLEX=0,DSC=1
000000                             282+CYALNVT   CSECT
000028                             283+          ORG   CYALNVT+16*X'002'+8
000028 01A0                        284+          DC    R($EP002) .            CCB ADDRESS
00002A 000C                        285+          DC    H'0'
00002C 000C                        286+          DC    H'0'
00002E 000C                        287+          DC    H'0'
000030 000C                        288+          DC    H'0'
000032 0000                        289+          DC    H'0' SDF
000034 010C                        290+          DC    X'0100' .
```

```
000036 32                              291+          DC    X'32' .
000037 00                              292+          DC    X'00' .
0000C8                                 293+CYAEPCCB  CSECT
0001A0                                 294+          DS    0H .
0001A0                                 295+$EP002    EQU   *
0001A0 0000000000000000                296+          DC    4H'0' .            DATA BUFFERS 0 AND 1.
0001A8 0000                            297+          DC    AL2(0) .           SERVICE QUEUE ELEMENT, CHAIN ADDRESS
0001AA 0000                            298+          DC    AL2(0) .           STATUS OUT QUEUE ELEMENT, CHAIN ADDR
0001AC B6                              299+          DC    X'B6' .          SUBCHANNEL  ADDRESS
0001AD A0                              300+          DC    X'A0' .      TYP1 CSB LCD CODE
0001AE 0000                            301+          DC    H'0'
0001B0 04                              302+          DC    X'04'
0001B1 000C000000                      303+          DC    5X'0'
0001B6 0000                            304+          DC    AL2(0) .           ADDRESS OF TIMER ROUTINE
0001B8 0000                            305+          DC    AL2(0) .           INTERRUPT ADDRESS
                                       306+*                                  OPT FIELD FOLLOWS
0001BA 01                              307+          DC    BL1'00000001' OPT
0001BB 18                              308+          DC    BL1'00011000' SECOND OPTION
0001BC 11                              309+          DC    BL1'00010001' .    STMOD
0001BD C0                              310+          DC    AL1((X'C4'/16)*16) .     LINE CONTROL DEFINITION FIELD
0001BE 0000                            311+          DC    AL2(0) .           BCC
0001C0 32                              312+          DC    X'32' EBCDIC  SYN
0001C1 37                              313+          DC    X'37' EBCDIC  EOT
0001C2 0000                            314+          DC    AL2(0) ALIGNMET BYTE WHEN NO AUTOCALL
0001C4 0000                            315+          DC    AL2(0) .           L2A1. SUBRTN ADDRESS
0001C6 00                              316+          DC    BL1'00000000' FLAG BYTE 1
0001C7 00                              317+          DC    BL1'00000000' FLAG BYTE 2
0000A8                                 318 CYACHVT   CSECT
0000B8                                 319           ORG   2+CYACHVT+2*(X'0B7'-X'0B0')
0000B8 0038                            320           DC    R(CYALNVT+8+16*X'003')
                                       321 $EP003 EPCCB SUBCHAN=X'B7',TERM=X'00',CODE=X'01',                X
                                                      LGT=$LGT3,OPTION1=00001100,                          XXXXXXXX
                                                      MODEM=1,DIAL=0,UNITXC=1,                              X
                                                      INTPRI=1,                                            XXXXX
                                                      OPTION2=00000000,LCD=X'C4',                          XXXXX
                                                      CSBTYPE=0,LINEAD=003,DUPLEX=0,OSC=1
000000                                 322+CYALNVT   CSECT
000038                                 323+          ORG   CYALNVT+16*X'003'+8
000038 01C8                            324+          DC    R($EP003) .          CCB ADDRESS
00003A 0000                            325+          DC    H'0'
00003C 0000                            326+          DC    H'0'
00003E 0000                            327+          DC    H'0'
000040 0000                            328+          DC    H'0'
000042 0000                            329+          DC    H'0' SDF
000044 0100                            330+          DC    X'0100' .
000046 32                              331+          DC    X'32' .
000047 00                              332+          DC    X'00' .
0000C8                                 333+CYAEPCCB  CSECT
0001C8                                 334+          DS    0H .
0001C8                                 335+$EP003    EQU   *
0001C8 0000000000000000                336+          DC    4H'0' .            DATA BUFFERS 0 AND 1.
0001D0 0000                            337+          DC    AL2(0) .           SERVICE QJEUE ELEMENT, CHAIN ADDRESS
0001D2 0000                            338+          DC    AL2(0) .           STATUS OUT QJEJE ELEMENT, CHAIN ADDR
0001D4 B7                              339+          DC    X'B7' .          SUBCHANNEL  ADDRESS
0001D5 A0                              340+          DC    X'A0' .      TYP1 CSB LCD CODE
```

```
  LOC  OBJ CODE   R1N1M R2N2 ADDR   STMT   SOURCE STATEMENT                                    18MAR72   9/07/72

0001D6 0000                        341+          DC    H'0'
0001D8 04                          342+          DC    X'04'
0001D9 C000C00000                  343+          DC    5X'0'
0001DE 0000                        344+          DC    AL2(0) .              ADDRESS OF TIMER ROUTINE
0001E0 0000                        345+          DC    AL2(0) .              INTERRUPT ADDRESS
                                   346+*                                     OPT FIELD FOLLOWS
0001E2 01                          347+          DC    BL1'00000001' OPT
0001E3 18                          348+          DC    BL1'00011000' SECOND OPTION
0001E4 11                          349+          DC    BL1'00010001' .       STMOD
0001E5 C0                          350+          DC    AL1((X'C4'/16)*16) .      LINE CONTROL DEFINITION FIELD
0001E6 000C                        351+          DC    AL2(0) .              BCC
0001E8 32                          352+          DC    X'32' EBCDIC  SYN
0001E9 37                          353+          DC    X'37' EBCDIC  EOT
0001EA 0000                        354+          DC    AL2(0) ALIGNMET BYTE WHEN NO AUTOCALL
0001EC 000C                        355+          DC    AL2(0) .              L2AL. SUBRTN ADDRESS
0001EE 00                          356+          DC    BL1'00000000' FLAG BYTE 1
0001EF C0                          357+          DC    BL1'00000000' FLAG BYTE 2
                                   358 $LGT3 EPLGT DIAL=0,LNCTL=1,                                          XXXXX
                                                  REPLYTO=30,TEXTTO=256
0001F0                             359+CYAEPLGT CSECT
000200                             360+          DS    0H
000200                             361+$LGT3     EQU   *
000200 0F                          362+          DC    AL1(30/2) TIME IN TENTHS OF SECONDS
000201 80                          363+          DC    AL1(256/2) TIME IN TENTHS OF SECONDS
000202 00                          364+          DC    AL1(0)
000203 00                          365+          DC    AL1(0)
000204 14                          366+          DC    BL1'00010100'
000205 000000                      367+          DC    AL3(0) .
0000A8                             368 CYACHVT   CSECT
0000BC                             369           ORG   CYAWRAP
0000BC 0048                        370           DC    R(CYALNVT+16*X'004'+8)    LINE 1
0000BE                             371 CYASCAN   EQU   *
                                   372           ENTRY CYASCAN
0000BE 80                          373           DC    AL1(128*1+0)
0000BF 00                          374           DC    AL1(128*0+0)
0000C0 00                          375           DC    AL1(128*0+0)
0000C1 C0                          376           DC    AL1(128*0+0)
0000C2 00                          377           DC    B'00000000'
                                   378           END
```

POS.ID	REL.ID	FLAGS	ADDRESS
01	03	08	000007
01	03	08	000017
01	03	08	000027
01	03	08	000037
01	03	08	000047
01	03	08	000057
01	03	08	000067
01	03	08	000077
01	03	08	000087
01	03	08	000097
02	01	08	0000A9
02	01	08	0000AB
02	01	08	0000AD
02	01	08	0000AF
02	01	08	0000B1
02	01	08	0000B3
02	01	08	0000B5
02	01	08	0000B7
02	01	08	0000BB
03	04	08	0000E7
03	04	08	000109
03	04	08	00012B
03	04	08	00014D

9/07/72

SYMBOL	LEN	VALUE	DEFN	REFERENCES														
$EP000	00001	000150	00194	0172	0183													
$EP001	00001	000178	00245	0223	0234													
$EP002	00001	0001A0	00295	0284														
$EP003	00001	0001C8	00335	0324														
$EP004	00001	0000C8	00029	0018														
$EP005	00001	0000EA	00065	0054														
$EP006	00001	00010C	00101	0090														
$EP007	00001	00012E	00137	0126														
$LGT1	00001	0001F0	00159	0047	0083	0119	0155											
$LGT2	00001	0001F8	00271															
$LGT3	00001	000200	00361															
CYACHEND	00001	0000BA	00010	0005														
CYACHVT	00001	0000A8	00003	0012	0013	0048	0049	0084	0085	0120	0121	0166	0167	0217	0218	0278	0279	0318
				0319	0368													
CYACHVTP	00001	000742	00004	0005														
CYAEPCCB	00001	000008	00027	0063	0099	0135	0192	0243	0293	0333								
CYAEPLGT	00001	0001F0	00157	0269	0359													
CYALNVT	00001	000000	00001	0014	0016	0017	0050	0052	0053	0086	0088	0089	0122	0124	0125	0168	0170	0171
				0181	0182	0219	0221	0222	0232	0233	0280	0282	0283	0320	0322	0323	037C	
CYASCAN	00001	0000BE	00371	0372														
CYAWRAP	00001	0000BC	00011	0005	0369													

STMT ERROR CODE MESSAGE 9/07/72

IFK046 AT LEAST ONE RELOCATABLE Y-TYPE OR R-TYPE CONSTANT IN ASSEMBLY

NO STATEMENTS FLAGGED IN THIS ASSEMBLY
4 WAS HIGHEST SEVERITY CODE
STATISTICS SOURCE RECORDS (SYSIN) = 103 SOURCE RECORDS (SYSLIB) = 326
OPTIONS IN EFFECT LIST, DECK, NOLOAD, NORENT, XREF, LINECNT = 55
507 PRINTED LINES

```
IEF142I - STEP WAS EXECUTED - COND CODE 0004
IEF285I   SYS72251.T044633.SV000.EPGEN.R0000001          SYSOUT
IEF285I   VOL SER NOS= SYSADM.
IEF285I   SYS72251.T044633.RV000.EPGEN.R0000002          DELETED
IEF285I   VOL SER NOS= MVT210.
IEF285I   SYS72251.T044633.RV000.EPGEN.R0000003          DELETED
IEF285I   VOL SER NOS= SPOOL1.
IEF285I   SYS72251.T044633.RV000.EPGEN.R0000004          DELETED
IEF285I   VOL SER NOS= MVTLNK.
IEF285I   SYS1.MAC3705                                   KEPT
IEF285I   VOL SER NOS= MVT210.
IEF285I   SYS1.EPOBJECT                                  KEPT
IEF285I   VOL SER NOS= MVT210.
IEF285I   SYS72251.T044633.RV000.EPGEN.S0000005          SYSIN
IEF285I   VOL SER NOS= SPOOL1.
IEF285I   SYS72251.T044633.RV000.EPGEN.S0000005          DELETED
IEF285I   VOL SER NOS= SPOOL1.
//S2 EXEC PGM=IEWL,PARM='LIST,LET,DC,NCAL,XREF'
//SYSLIB DD DSN=SYS1.EPOBJECT,DISP=SHR
//SYSLMOD DD DSN=&&PCUTEMP,DISP=(,PASS),SPACE=(TRK,(25,10,2)),        XXX
//             UNIT=2314
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD UNIT=2314,SPACE=(1024,(50,20))
//SYSLIN DD *
IEF236I ALLOC. FOR EPGEN    S2
IEF237I 137   ALLOCATED TO SYSLIB
IEF237I 131   ALLOCATED TO SYSLMOD
IEF237I 137   ALLOCATED TO SYSPRINT
IEF237I 13C   ALLOCATED TO SYSUT1
IEF237I 130   ALLOCATED TO SYSLIN
```

```
 F88-LEVEL LINKAGE EDITOR OPTIONS SPECIFIED LIST,LET,DC,NCAL,XREF
         DEFAULT OPTION(S) USED -  SIZE=(92160,10240)
IEW0000      REPLACE CYAEPCCB
IEW0000      REPLACE CYAEPLGT
IEW0000      REPLACE CYACHVT
IEW0000      INCLUDE SYSLIB(FEEDEPBF)
IEW0000      NAME CYALNVT
IEW0461  CYAEPCCB
```

CROSS REFERENCE TABLE

CONTROL SECTION NAME	ORIGIN	LENGTH	ENTRY NAME	LOCATION	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION
CYALNVT	00	A8								

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION	LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
7	CYAEPCC3	$UNRESOLVED	17	CYAEPCCB	$UNRESOLVED
27	CYAEPCCB	$UNRESOLVED	37	CYAEPCCB	$UNRESOLVED
47	CYAEPCCB	$UNRESOLVED	57	CYAEPCCB	$UNRESOLVED
67	CYAEPCCB	$UNRESOLVED	77	CYAEPCCB	$UNRESOLVED
87	CYAEPCCB	$UNRESOLVED	97	CYAEPCCB	$UNRESOLVED

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```
 ENTRY ADDRESS        00
 TOTAL LENGTH         A8

****CYALNVT    NOW ADDED TO DATA SET
```

DIAGNOSTIC MESSAGE DIRECTORY

IEW0461 WARNING - SYMBOL PRINTED IS AN UNRESOLVED EXTERNAL REFERENCE; NCAL WAS SPECIFIED, OR THE REFERENCE WAS MARKED FOR RESTRICTED NO-CALL OR NEVERCALL.

```
IEW0000      REPLACE CYAEPCCB
IEW0000      REPLACE CYAEPLGT
IEW0000      REPLACE CYALNVT
IEW0000      INCLUDE SYSLIB(FEEDEPBF)
IEW0000      NAME CYACHVT
IEW0461  CYALNVT
```

CROSS REFERENCE TABLE

CONTROL SECTION NAME	ORIGIN	LENGTH
CYACHVT	00	1B

ENTRY

NAME	LOCATION	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION
CYACHEND	12	CYAWRAP	14	CYASCAN	16	CYACHVTP	69A

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
1	CYALNVT	$UNRESOLVED
5	CYALNVT	$UNRESOLVED
9	CYALNVT	$UNRESOLVED
D	CYALNVT	$UNRESOLVED
13	CYALNVT	$UNRESOLVED
ENTRY ADDRESS	00	
TOTAL LENGTH	20	

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
3	CYALNVT	$UNRESOLVED
7	CYALNVT	$UNRESOLVED
B	CYALNVT	$UNRESOLVED
F	CYALNVT	$UNRESOLVED

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****CYACHVT NOW ADDED TO DATA SET

DIAGNOSTIC MESSAGE DIRECTORY

IEW0461 WARNING - SYMBOL PRINTED IS AN UNRESOLVED EXTERNAL REFERENCE; NCAL WAS SPECIFIED, OR THE REFERENCE WAS MARKED FOR RESTRICTED NO-CALL OR NEVERCALL.

```
IEW0000      REPLACE CYAEPCCB
IEW0000      REPLACE CYALNVT
IEW0000      REPLACE CYACHVT
IEW0000      INCLUDE SYSLIB(FEEDEPBF)
IEW0000      NAME CYAEPLGT
```

CROSS REFERENCE TABLE

CONTROL SECTION			ENTRY							
NAME	ORIGIN	LENGTH	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION
CYAEPLGT	00	18								

```
ENTRY ADDRESS       00
TOTAL LENGTH        18

****CYAEPLGT  NOW ADDED TO DATA SET
```

```
IEW0000      REPLACE CYAEPLGT
IEW0000      REPLACE CYACHVT
IEW0000      REPLACE CYALNVT
IEW0000      INCLUDE SYSLIB(IEEDEPBE)
IEW0000      NAME CYAEPCCB
IEW0461  CYAEPLGT
```

CROSS REFERENCE TABLE

CONTROL SECTION NAME	ORIGIN	LENGTH	ENTRY NAME	LOCATION	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION
CYAEPCCB	00	128								

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION	LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
1F	CYAEPLGT	$UNRESOLVED	41	CYAEPLGT	$UNRESOLVED
63	CYAEPLGT	$UNRESOLVED	85	CYAEPLGT	$UNRESOLVED

ENTRY ADDRESS 00
TOTAL LENGTH 128

****CYAEPCCB NOW ADDED TO DATA SET

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DIAGNOSTIC MESSAGE DIRECTORY

IEW0461 WARNING - SYMBOL PRINTED IS AN UNRESOLVED EXTERNAL REFERENCE; NCAL WAS SPECIFIED, OR THE REFERENCE WAS MARKED FOR RESTRICTED NO-CALL OR NEVERCALL.

```
IEF142I - STEP WAS EXECUTED - COND CODE 0004
IEF285I    SYS1.EPOBJECT                                    KEPT
IEF285I    VOL SER NOS= MVT210.
IEF285I    SYS72251.T044633.RV000.EPGEN.PCUTEMP             PASSED
IEF285I    VOL SER NOS= MVTLNK.
IEF285I    SYS72251.T044633.SV000.EPGEN.R0000006            SYSOUT
IEF285I    VOL SER NOS= MVT210.
IEF285I    SYS72251.T044633.RV000.EPGEN.R0000007            DELETED
IEF285I    VOL SER NOS= SPOOL1.
IEF285I    SYS72251.T044633.RV000.EPGEN.S0000008            SYSIN
IEF285I    VOL SER NOS= SPOOL1.
IEF285I    SYS72251.T044633.RV000.EPGEN.S0000008            DELETED
IEF285I    VOL SER NOS= SPOOL1.
//S2 EXEC PGM=IEWL,PARM='LIST,LET,DC,NCAL,XREF'
//03705 DD DSN=SYS1.OBJ3705,DISP=SHR
//SYSLIB DD DSN=SYS1.EPOBJECT,DISP=SHR
//SYSLMOD DD DSN=SYS1.EPDTASET,DISP=OLD
//SYSPRINT DD SYSOUT=A
//TEMP DD DSN=&&PCUTEMP,DISP=(OLD,PASS)
//SYSUT1 DD UNIT=2314,SPACE=(1024,(50,20))
//SYSLIN DD *
IEF236I ALLOC. FOR EPGEN    S2
IEF237I 137    ALLOCATED TO 03705
IEF237I 137    ALLOCATED TO SYSLIB
IEF237I 137    ALLOCATED TO SYSLMOD
IEF237I 133    ALLOCATED TO SYSPRINT
IEF237I 131    ALLOCATED TO TEMP
IEF237I 130    ALLOCATED TO SYSUT1
IEF237I 130    ALLOCATED TO SYSLIN
```

```
F88-LEVEL LINKAGE EDITOR OPTIONS SPECIFIED LIST,LET,DC,NCAL,XREF
          DEFAULT OPTION(S) USED -  SIZE=(92160,10240)
IEW0000      INCLUDE 03705(CYANUC10)
IEW0000      INCLUDE TEMP(CYALNVT)
IEW0000      INCLUDE TEMP(CYACHVT)
IEW0000      INCLUDE TEMP(CYAEPCCB)
IEW0000      INCLUDE TEMP(CYAEPLGT)
IEW0000      INCLUDE 03705(CYASVC10)
IEW0000      INCLUDE 03705(CYASIS10)
IEW0000      INCLUDE 03705(CYASL110)
IEW0000      INCLUDE 03705(CYABIS10)
IEW0000      INCLUDE 03705(CYABL110)
IEW0000      INCLUDE 03705(CYABIT30)
IEW0000      INCLUDE 03705(CYATRC10)
IEW0000      ENTRY CYASTART
IEW0000      NAME FEEDEPBF(R)
IEW0461  CYAB28CL
IEW0461  CYAB2848
IEW0461  CYAATDA4
****FEEDEPBF  DOES NOT EXIST BUT HAS BEEN ADDED TO DATA SET
```

CROSS REFERENCE TABLE

CONTROL SECTION

NAME	ORIGIN	LENGTH
CYANUC	00	7F8
CYALNVT	7F8	A8
CYACHVT	8A0	1B
CYAEPCCB	8C0	128
CYAEPLGT	9E8	18
CYASVC	A00	720
CYASIS	1120	132
CYASL	1258	574

ENTRY

NAME	LOCATION	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION
CYANUCS1	9C	CYAIREND	B8	CYAL2IDL	C6	CYADSL3X	FC
CYAL3H	100	CYANUCS2	102	CYAINSEL	116	CYATMEND	11A
CYATRETN	11C	CYANUCS3	124	CYATMTX	2C8	CYADSCL3	37C
CYADS116	396	CYADSC00	39A	CYADS23	3F0	CYAENQSS	528
CYASTART	548	CYASETL2	5FA	CYAPCFVT	600	CYAPFVCT	600
CYACHEND	8B2	CYAWRAP	8B4	CYASCAN	8B6		
CYADSOEQ	A4E	CYADSIEQ	A62	CYACND01	A76	CYACND02	A7A
CYACND04	A7E	CYACND08	A82	CYAEQCHK	A86	CYACND10	A8C
CYACND20	A90	CYACND40	A94	CYAICEND	A96	CYACND00	A9C
CYACND1X	AA2	CYASOENQ	ABC	CYASOEQ1	ABE	CYAIS	AFA
CYACMREJ	B76	CYADISWR	DC2	CYAAECCB	DE2	CYASTIDL	E0C
CYASTMOD	E18	CYACENOP	E82	CYACHVTP	F3A		
CYACWRIS	1128	CYACPOLS	1176	CYANEGR	1176	CYACBKPL	119C
CYACBRES	11A0	CYACREAS	11A6	CYACRDCL	11A6	CYACPRES	11FA
CYACSEAS	122C						
CYAATDA1	1260	CYASRCH	1260	CYASTPER	12E0	CYABARP1	133A
CYAATDA0	1364	CYAAATB1	13CC	CYANOLRC	1432	CYATXOB	14BE
CYATRN	14E6	CYABTDA0	1580	CYADCK	15C8	CYADCKEN	15EC

NAME	ORIGIN	LENGTH
CYABIS	17D0	258
CYABL	1A28	6CC
CYABIT	20F8	437
CYAMDRST	2530	36
CYATRC	2568	2E9
$PRIVATE	2858	00

NAME	LOCATION	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION
CYAENDUE	15FA	CYAEND	1616	CYASTORE	1634	CYARLRC	1706
CYAMTBFR	1724						
CYACWRIB	17D8	CYACPOLB	17D8	CYATBSPL	1832	CYACSEAB	1862
CYACREAB	1868	CYATBSRD	18B4	CYABSTOP	18FA	CYABSHIO	1906
CYACPREB	192C	CYATBSPR	1958	CYACSETB	196A	CYATBSSM	1980
CYACADPB	19D2						
CYATAXIO	1A30	CYATAPDO	1B52	CYATXDAO	1BD6	CYATBSWR	1C7A
CYATSTMW	1CAE	CYARARSO	1D0A				
CYANOPEX	2100	CYABBTSV	2100	CYANOOPX	2106	CYAMPCF1	211A
CYABPCF2	212E	CYABPCF3	2142	CYAPCF45	218A	CYASPCF8	21EC
CYASPCFB	22EE	CYASPCFC	22EE	CYASPCFA	231C	CYAXSSTT	234E
CYARCDTA	236A	CYASRCVT	237C	CYABPCF8	23DE	CYABPCFA	2406
CYAXMDTA	2412	CYASPCFD	2428	CYAMPCFF	2442	CYADINOP	245A
CYAPCFD4	2468	CYAPCFD5	2498	CYAPCFD8	24B2	CYADPCFF	24D4
CYATRCL2	2646	CYATRCDS	268E	CYATRCEI	26C2	CYATRCIS	26D0

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
30B	CYASTIDL	CYASVC
1B3	CYALNVT	CYALNVT
253	CYACHVT	CYACHVT
DF	CYACND08	CYASVC
151	CYATBSSM	CYABIS
159	CYATBSRD	CYABIS
165	CYATBSPL	CYABIS
2AD	CYAMTBFR	CYASL
2F7	CYACND01	CYASVC
B9	CYACND40	CYASVC
3FD	CYASOENQ	CYASVC
2E1	CYASTM3D	CYASVC
111	CYATRCEI	CYATRC
2D3	CYADISWR	CYASVC
571	CYAAECCB	CYASVC
6FF	CYACHVT	CYACHVT
47D	CYACND02	CYASVC
593	CYANOOPX	CYABIT
60B	CYANOOPX	CYABIT
61F	CYANOOPX	CYABIT
635	CYANOOPX	CYABIT
641	CYANOOPX	CYABIT
645	CYANOOPX	CYABIT
64D	CYANOOPX	CYABIT
653	CYANOOPX	CYABIT
657	CYANOOPX	CYABIT

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
7D	CYASTPER	CYASL
1A5	CYACHVT	CYACHVT
1B3	CYACHVTP	CYACHVT
79	CYANOPEX	CYABIT
155	CYATBSWR	CYABL
15D	CYATBSPR	CYABIS
173	CYATSTMW	CYABL
331	CYACND00	CYASVC
2B1	CYACND20	CYASVC
303	CYACND40	CYASVC
311	CYAEQCHK	CYASVC
117	CYAIS	CYASVC
261	CYAMDRST	CYAMDRST
485	CYASTIDL	CYASVC
569	CYACHVT	CYACHVT
441	CYASOEQ1	CYASVC
495	CYABSTOP	CYABIS
5FF	CYANOOPX	CYABIT
61B	CYANOOPX	CYABIT
62B	CYANOOPX	CYABIT
63B	CYANOOPX	CYABIT
643	CYANOOPX	CYABIT
64B	CYANOOPX	CYABIT
651	CYANOOPX	CYABIT
655	CYANOOPX	CYABIT
659	CYANOOPX	CYABIT

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
658	CYANOOPX	CYABIT
661	CYANOOPX	CYABIT
665	CYANOOPX	CYABIT
669	CYANOOPX	CYABIT
66D	CYANOOPX	CYABIT
671	CYANOOPX	CYABIT
675	CYANOOPX	CYABIT
679	CYANOOPX	CYABIT
67	CYANOOPX	CYABIT
621	CYAMPCF1	CYABIT
623	CYABPCF2	CYABIT
625	CYABPCF3	CYABIT
609	CYAPCF45	CYABIT
629	CYAPCF45	CYABIT
60F	CYASPCF8	CYABIT
613	CYASPCFA	CYABIT
617	CYASPCFC	CYABIT
619	CYASPCFD	CYABIT
61D	CYAMPCFF	CYABIT
65D	CYAMPCFF	CYABIT
62F	CYABPCF8	CYABIT
633	CYABPCFA	CYABIT
649	CYAPCFD5	CYABIT
5AF	CYADINOP	CYABIT
7FF	CYAEPCCB	CYAEPCCB
81F	CYAEPCCB	CYAEPCCB
83F	CYAEPCCB	CYAEPCCB
85F	CYAEPCCB	CYAEPCCB
87F	CYAEPCCB	CYAEPCCB
8A1	CYALNVT	CYALNVT
8A5	CYALNVT	CYALNVT
8A9	CYALNVT	CYALNVT
8AD	CYALNVT	CYALNVT
8B3	CYALNVT	CYALNVT
901	CYAEPLGT	CYAEPLGT
945	CYAEPLGT	CYAEPLGT
A21	CYADS23	CYANUC
C45	CYACWRIS	CYASIS
C69	CYACREAS	CYASIS
C6D	CYACPOLS	CYASIS
C61	CYACBRES	CYASIS
C8B	CYACSBTB	CYABIS
C47	CYACREAB	CYABIS
C87	CYACADPB	CYABIS
C75	CYACBKPL	CYASIS
B05	CYACHVT	CYACHVT
C71	CYACRDCL	CYASIS
B49	CYASTART	CYANUC
D3D	CYABARP1	CYASL
E7D	CYARARSO	CYABL
E0D	CYAL2IDL	CYANUC
1073	CYACHVTP	CYACHVT

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
65F	CYANOOPX	CYABIT
663	CYANOOPX	CYABIT
667	CYANOOPX	CYABIT
66B	CYANOOPX	CYABIT
66F	CYANOOPX	CYABIT
673	CYANOOPX	CYABIT
677	CYANOOPX	CYABIT
67B	CYANOOPX	CYABIT
601	CYAMPCF1	CYABIT
603	CYABPCF2	CYABIT
605	CYABPCF3	CYABIT
607	CYAPCF45	CYABIT
627	CYAPCF45	CYABIT
60D	CYASRCVT	CYABIT
611	CYAXSSTT	CYABIT
615	CYASPCFB	CYABIT
637	CYASPCFC	CYABIT
639	CYASPCFD	CYABIT
63D	CYAMPCFF	CYABIT
62D	CYARCDTA	CYABIT
631	CYAXMDTA	CYABIT
647	CYAPCFD4	CYABIT
64F	CYAPCFD8	CYABIT
63F	CYADINOP	CYABIT
80F	CYAEPCCB	CYAEPCCB
82F	CYAEPCCB	CYAEPCCB
84F	CYAEPCCB	CYAEPCCB
86F	CYAEPCCB	CYAEPCCB
88F	CYAEPCCB	CYAEPCCB
8A3	CYALNVT	CYALNVT
8A7	CYALNVT	CYALNVT
8AB	CYALNVT	CYALNVT
8AF	CYALNVT	CYALNVT
8DF	CYAEPLGT	CYAEPLGT
923	CYAEPLGT	CYAEPLGT
CC7	CYADSC00	CYANUC
AF7	CYAENQSS	CYANUC
C49	CYACREAS	CYASIS
C65	CYACPOLS	CYASIS
C59	CYACPRES	CYASIS
C79	CYACSEAS	CYASIS
C43	CYACWRIB	CYABIS
C63	CYACPOLB	CYABIS
C57	CYACPREB	CYABIS
C77	CYACSEAB	CYABIS
DD3	CYAL2IDL	CYANUC
D2F	CYABSHID	CYABIS
D17	CYATAPDC	CYABL
E6D	CYABTDA0	CYASL
F6F	CYARARSO	CYABL
FFB	CYAL2IDL	CYANUC
1073	CYALNVT	CYALNVT

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
EE9	CYAWRAP	CYACHVT
11E3	CYADSOEQ	CYASVC
1227	CYACND00	CYASVC
112B	CYAATDA0	CYASL
11A1	CYAAATB1	CYASL
1185	CYACMREJ	CYASVC
1201	CYABARP1	CYASL
1597	CYAB28CL	$UNRESOLVED
137F	CYAATDA4	$UNRESOLVED
13A9	CYASETL2	CYANUC
13DB	CYASETL2	CYANUC
14C9	CYASETL2	CYANUC
1505	CYASETL2	CYANUC
159F	CYASETL2	CYANUC
1579	CYACND00	CYASVC
1561	CYAVEGR	CYASIS
17FB	CYADSIEQ	CYASVC
1899	CYADSOEQ	CYASVC
182D	CYASOENQ	CYASVC
1967	CYATRETN	CYANUC
18F7	CYATMEND	CYANUC
18BD	CYARARS0	CYABL
17F5	CYATAXI0	CYABL
18FB	CYACHVTP	CYACHVT
18FB	CYALNVT	CYALNVT
1819	CYAICEND	CYASVC
18AF	CYACND00	CYASVC
19CD	CYACND00	CYASVC
1927	CYACND40	CYASVC
1E05	CYAICEND	CYASVC
1D03	CYACND00	CYASVC
1D83	CYACND10	CYASVC
1CBF	CYATMEND	CYANUC
1FC5	CYASOENQ	CYASVC
2588	CYACHVT	CYACHVT
262D	CYANUCS1	CYANUC
2681	CYANUCS1	CYANUC
2639	CYANUCS2	CYANUC
2641	CYANUCS3	CYANUC
2701	CYALNVT	CYALNVT
26FD	CYAINSEL	CYANUC
ENTRY ADDRESS	548	
TOTAL LENGTH	2858	

LOCATION	REFERS TO SYMBOL	IN CONTROL SECTION
FD0	CYASETL2	CYANUC
113B	CYADSIEQ	CYASVC
116D	CYACND1X	CYASVC
1193	CYAATDA0	CYASL
1171	CYAL2IDL	CYANUC
11B1	CYABTDA0	CYASL
123B	CYASRCH	CYASL
159B	CYAB2848	$UNRESOLVED
1361	CYASETL2	CYANUC
13C9	CYASETL2	CYANUC
13F5	CYASETL2	CYANUC
14E3	CYASETL2	CYANUC
1575	CYASETL2	CYANUC
1539	CYACND00	CYASVC
132B	CYAIREND	CYANUC
1731	CYACND00	CYASVC
1971	CYADSIEQ	CYASVC
18DB	CYADSOEQ	CYASVC
19D7	CYACMREJ	CYASVC
185F	CYATMEND	CYANUC
183B	CYARARS0	CYABL
190F	CYARARS0	CYABL
180F	CYATXDA0	CYABL
1997	CYACHVTP	CYACHVT
1997	CYALNVT	CYALNVT
1843	CYAICEND	CYASVC
1951	CYACND00	CYASVC
18F3	CYACND01	CYASVC
1DC7	CYADSIEQ	CYASVC
1C09	CYACND00	CYASVC
1D4D	CYACND00	CYASVC
1CAB	CYATRETN	CYANUC
1C97	CYATMTX	CYANUC
253D	CYACHVT	CYACHVT
259F	CYACHVT	CYACHVT
2631	CYANUCS1	CYANUC
2635	CYANUCS2	CYANUC
263D	CYANUCS3	CYANUC
2701	CYACHVTP	CYACHVT
26CD	CYADSL3X	CYANUC

DIAGNOSTIC MESSAGE DIRECTORY

IEW0461 WARNING - SYMBOL PRINTED IS AN UNRESOLVED EXTERNAL REFERENCE; NCAL WAS SPECIFIED, OR THE REFERENCE WAS MARKED FOR RESTRICTED NO-CALL OR NEVERCALL.

```
IEF142I - STEP WAS EXECUTED - COND CODE 0004
IEF285I   SYS1.OBJ3705                                    KEPT
IEF285I   VOL SER NOS= MVT210.
IEF285I   SYS1.EPOBJECT                                   KEPT
IEF285I   VOL SER NOS= MVT210.
IEF285I   SYS1.EPDTASET                                   KEPT
IEF285I   VOL SER NOS= MVT210.
IEF285I   SYS72251.T044633.SV000.EPGEN.R0000009           SYSOUT
IEF285I   VOL SER NOS= SYSADM.
IEF285I   SYS72251.T044633.RV000.EPGEN.PCUTEMP            PASSED
IEF285I   VOL SER NOS= MVTLNK.
IEF285I   SYS72251.T044633.RV000.EPGEN.R0000010           DELETED
IEF285I   VOL SER NOS= SPOOL1.
IEF285I   SYS72251.T044633.RV000.EPGEN.S0000011           SYSIN
IEF285I   VOL SER NOS= SPOOL1.
IEF285I   SYS72251.T044633.RV000.EPGEN.S0000011           DELETED
IEF285I   VOL SER NOS= SPOOL1.
IEF285I   SYS72251.T044633.RV000.EPGEN.PCUTEMP            DELETED
IEF285I   VOL SER NOS= MVTLNK.
```

Sample Run of C.S. 1

Objectives:

1. Use to show Trace operation on a good line in C.S.1.
2. Use to show basic Data Flow of the 3705.
3. Use to study system layout.

Sequence of Operations:

1. Loaded Emulator Program
2. Started Trace
3. Loaded TCAM and activated sub-channel address 0B3
4. Inputted Message at Terminal
5. Hit Stop on 3705
6. Hit Load key on 3705
7. Took Dump of 3705

```
//LOADBF JOB MSGLEVEL=1,PRTY=13,CLASS=J
//GOGO  EXEC PGM=IEWLOADRN
//F3705 DD UNIT=08F
//SYSUT1 DD DSN=SYS1.EPDTASET,DISP=SHR,VOL=SER=MVT210,UNIT=2314
//SYSPRINT DD SYSOUT=A
//SYSIN DD * GENERATED STATEMENT
//
IEF236I ALLOC. FOR LOADBF   GOGO
IEF237I 08F    ALLOCATED TO F3705
IEF237I 137    ALLOCATED TO SYSUT1
IEF237I 134    ALLOCATED TO SYSPRINT
IEF237I 130    ALLOCATED TO SYSIN
```

```
LOAD LOADMOD=FEEDEPBF,3705=F3705,DIAG=NO                    3
  IFL008I 3705 LOAD COMPLETE 3705-0BF LOADMOD=FEEDEPBF

IFLCC1I UTILITY END  00 WAS HIGHEST SEVERITY CODE
```

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   SYS1.EPDTASET                                  KEPT
IEF285I   VOL SER NOS= MVT210.
IEF285I   SYS72256.T034902.SV000.LOADBF.R0000128         SYSOUT
IEF285I   VOL SER NOS= SYSLNG.
IEF285I   SYS72256.T034902.RV000.LOADBF.S0000129         SYSIN
IEF285I   VOL SER NOS= SYSIMS.
IEF285I   SYS72256.T034902.RV000.LOADBF.S0000129         DELETED
IEF285I   VOL SER NOS= SYSIMS.
```

```
001 CHIB3 CHIB3 / TEST1
001 CHIB3 CHIB3 / 72.256 06.05.46 TEST1
```

```
//DUMPBF  JOB MSGLEVEL=1,PRTY=13,CLASS=J
//STEP    EXEC  PGM=IEFBR14
//SYSUT1  DD UNIT=CSE
//SYSUT2  DD DSN=DUMP3705,DISP=(NEW,DELETE),UNIT=2314,                  *
//    SPACE=(CYL,(1,1)),VOL=SER=MVT210
//SYSPRINT DD SYSOUT=A
//SYSIN DD * GENERATED STATEMENT
//
IEF236I ALLOC. FOR DUMPBF   STEP
IEF237I 08F    ALLOCATED TO SYSUT1
IEF237I 137    ALLOCATED TO SYSUT2
IEF237I 134    ALLOCATED TO SYSPRINT
IEF237I 130    ALLOCATED TO SYSIN
```

GENERAL REGISTERS

GROUP 0	014E2	0290C	00870	00000	00926	00001	01580	0A6EB
GROUP 1	0026C	0204C	00001	00920	009C0	00001	00264	008AC
GROUP 2	003FC	00002	00830	010B3	00926	00030	03728	00002
GROUP 3	00B22	00E55	00EC0	01090	018C9	0302C	00302	02740

```
00200   57015503 A8754B1A CB02A87F 45234204   92035280 FA0CFA84 270BA88B 250B2707   *.....*
00220   A8912507 280981FF 873077E4 2605BC2D   02362485 A8A7146C 6485131C 1308D308   *.....U.....L.*
00240   C802E3F7 C3A07314 14144088 73F48802   A931BF20 08A00781 712CF142 880271D4   *H.T7C..... ..4.....1....M*
00260   BEC02530 B9202040 7174B840 43213801   A80EEC08 8032A808 4B1AEB0B 43213800   *..... ... .....*
00280   DCFA8969 81240018 88C29971 811EA975   DCEAEB62 E3F8B350 880DB330 88114313   *.....T8.....*
002A0   D3014393 07814315 BE2000C6 B8001724   BE000A90 A854481C C882DCC0 4319FB88   *L.....F.....H.....*
002C0   A3034399 8064A9AD E0DF489C 07818340   4B93BF00 0DC2E403 25874F1B FF82AA29   *.....BU.....*
002E0   BF000E18 AA2F4223 A8002A09 85C02D89   42049210 981A8E00 0A76A80E 4B0D2B89   *.....*
00300   4204BE00 0A94E403 2587BE00 0E0CA9F7   BE000A86 A80D4B0D 2B894204 8002AA05   *.....U.....7.....*
00320   2B09FB88 F31E9813 D3012B89 4B1AEB3B   BE000A9C A82D8102 AA1F75EC 5008BD20   *....3...L.....*
00340   00CC7574 E1F8E078 8C5AD90A BE00036E   BE00036A 7004BE00 036EBE00 036A8108   *.....8....R.....*
00360   71E4BD20 03F61504 AC3A7114 714C035E   9302FA82 A3203181 03DE6088 11A8632C   *.U...6.....*
00380   BF200340 6724CA44 CAC40509 DA42FA22   DCB8A806 068D4891 48958520 75F4040D   *... .....D.....4..*
003A0   98320411 982C0415 98620419 9872041D   98760421 8C0A632C DB0C0509 84400589   *.....*
003C0   BF2C2350 A85E8380 6374B840 A878A8CA   A91E04A9 75E44F11 CF26EF86 45014603   *..... .....U.....*
003E0   A8044505 46076654 65448683 E7039741   4C0C6534 67248530 75F4B840 BE000ABC   *.....X.....4. ....*
00400   000C026C 00002040 00000001 00000920   000009C0 00000001 00000264 000008A0   *..... .....*
00420   000003FC 00000002 00000830 000010B3   00000926 00000030 00003728 00000002   *.....*
00440   00000B22 00000E55 00000EC0 00001090   000018C9 0000302C 00000302 00002740   *.....I..... *
00460   00070103 06010103 05050200 06060400   03030707 05060402 00050005 00020401   *.....*
00480   06070405 05030206 00000207 01000005   05000701 00000301 04010004 07070207   *.....*
004A0   00070404 03000203 06040401 05060305   06050207 05070101 03040103 04010203   *.....*
004C0   05030205 05030006 07050207 06000600   01070002 05070704 05040604 01020200   *.....*
004E0   05000001 00000000 06A3628B 8400A818   872077E4 DC9FEAA2 CCBC0419 460B408B   *.....U..... .*
00500   9802009B 0699DBA0 4911E17F 4991488E   BD888340 6374737C DB840589 A985EB07   *..... .....*
00520   83026374 8400A80F 02238806 248B04A3   A99904A1 A809DB95 84000421 460B408B   *..... .*
00540   980200A3 06A1A841 80204154 8200BA83   80404154 84408180 4144813E 80014124   *..... ... .....*
00560   4114BC89 41444114 BF2008A0 A8582401   BE000DE2 4D1A11A8 CD065108 E103A802   *.....S.....*
00580   42232087 208BBE20 00082683 BE200601   26898E20 21062685 4274717C C882A807   *.....H...*
005A0   11A8491C 41244114 1224C580 CD0CBE20   245A2685 32F82298 A841FB8A 4D1DCD02   *.....E.....8.....*
005C0   A8044D27 CD0E9702 720124F8 880E980B   2388A867 42292388 9301A86F 008D0091   *.....8.....*
005E0   009500A1 00A30099 009B009D 00898310   63748304 853875F4 AA33E3FE 43993088   *.....4..T.....*
00600   2106211A 212E2142 218A218A 2106237C   21EC234E 231C22EE 22EE2428 21062442   *.....*
00620   2106211A 212E2142 218A218A 2106236A   23DE2412 24062106 22EE2428 21062442   *.....*
00640   245A2106 21062106 24682498 21062106   24B22106 21062106 21062106 21062442   *.....*
00660   21062106 21062106 21062106 21062106   21062106 21062106 21062106 21062106   *.....*
00680   FFFF0000 00000000 00000002 D5E4C3F7   F2F1F7F0 D7E3C3C8 00000000 00000000   *.....NUC72170PTCH.....*
006A0   00C00000 C0000000 00000000 00000000   00000000 00000000 00000000 00000000   *.....*
        LINE 006C0 SAME AS ABOVE
006E0   00000000 00000000 00000000 00000000   00000000 008A0000 00000008 00000000   *.....*
00700   08AC0000 00000002 00010000 00000000   00000926 00000926 00000000 00000926   *.....*
00720   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000   *.....*
        LINES 00740-00760 SAME AS ABOVE
00780   000014E2 00002900 00000870 00C00000   00000926 00000001 00001580 00C0A6EB   *...S.....*
007A0   B82C0000 B9200000 BA200000 BB200000   BC200000 BD200000 BE200000 BF20000C   *.....*
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007C0  B84C0022 0C000000 00000000 AD744710  90D49620 A074D603 C024C024 000007DE  *. ..............M....O.........*
007E0  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000  *................................*
00800  09480008 21060000 06010000 01003200  09700008 21060000 06010000 01003200  *................................*
00820  09980008 21060000 06010000 01003200  09C00008 21060000 06010000 01003200  *................................*
00840  08C00008 21060000 06010000 00802001  08E20008 21060000 06010000 00802001  *..................S.............*
00860  09040008 21060000 06010000 00802001  09260008 230C0001 068E0000 00802001  *................................*
00880  09480008 245A0000 06010000 00000000  09700008 245A0000 06010000 00000000  *................................*
008A0  B0B70840 08500860 08700800 08100820  08300001 08408000 00000000 00000000  *... ..... ..... ..... .........*
008C0  00000000 00000000 00000000 B0B00000  04000000 00008700 00C60098 8040008F  *.....................F... ..*
008E0  09E80000 00000000 00000000 00000B10  00000400 00000000 87000006 00988040  *.Y.....................F... *
00900  008F09E8 00000000 00000000 00000000  B2800000 04000000 00008700 00C60098  *...Y.....................F..*
00920  8C40008F 09E81F1F 1F3D0D01 A6EB0000  00000380 00003000 0000020B E51E133A  *. ...Y.....................V...*
00940  00D8A040 008F09E8 00000000 00000000  00000000 B4A00000 C4000000 00008700  *.Q. ...Y.....................*
00960  00C68918 18000007 32370880 00000000  00000000 00000000 00000000 B5A00000  *.F.....................*
00980  04000000 00008700 00C68918 18000007  32370890 00000000 00000000 00000000  *.........F.....................*
009A0  00000000 B6A00000 04000000 00008700  00C60118 11000007 32370000 00000000  *.................F.............*
009C0  00000000 00000000 00000000 B7A00000  04000000 00008700 00C60118 11000007  *.....................F.....*
009E0  32370000 00000000 0F800000 10000000  0F800000 1C000000 0F800000 14000000  *................................*
00A00  F2E5C3F7 F2F1F7F0 050B45C8 048B9920  86104910 E98E8510 D6080789 BF202748  *SVC72170...H........Z...O.....*
00A20  B80003F0 4D0E8811 06214688 008B8817  068B660B 882146B8 8821A80D 86000789  *...O...........................*
00A40  008BBB20 03406324 70C42388 A8D40311  40898808 03133489 04936088 04910493  *..... ...D...M.. ..............*
00A60  A86A0315 40898808 03173489 04976088  04950497 A8568201 A81C8202 A8188204  *.... ..........................*
00A80  A8148208 A810820E 8310A826 8210A806  8220A802 82404B13 2358A806 820C4B13  *..................... ..........*
00AA0  881C824F DB02C201 DB82C240 E3CF9802  C2024093 438F4910 D1044990 4097031B  *......B...B T...B. .....J... ...*
00AC0  8806348B 049B6088 0499049B 70C46088  11A8488E A9E8B103 8810F1FF 9852657C  *..............D.......Y....1.....*
00AE0  611C0448 9808616C A802800C 498E11A8  63049701 0789B800 0528611C 650C677C  *................................*
00B00  06388848 BB2008A0 37010738 98206028  981C0318 03183303 3401FBBA 32880709  *................................*
00B20  DE9CCC38 CC9ADC18 DC98ECD7 FC5FFC94  6304B840 00000000 00000000 0000A905  *..........P..... ..............*
00B40  A94EA9AE 832073E4 B8000548 BB200B2D  3E8B8710 677434F8 4498A841 BD200C14  *.......U.............8.........*
00B60  B1309826 A101B140 8826911F B1608820  63049701 07898520 75E4BE20 0E80468F  *....... ..................U.....*
00B80  813C4990 BE00DABE AAAC1518 59008989  1278E2FC 63049701 0789F910 FBA94C1C  *.................S.......9.....*
00BA0  4E1DF9D8 0028488F 4F27EF2A BD200C40  25188720 77E4FB8C F90A2A09 9210984E  *..9Q.......... .....U..9.....*
00BC0  2307DAC6 4F10E1F8 7308E303 31584990  CE025003 5001B10D 882FCE67 A833E203  *...F...8..T...................S.*
00BE0  2387E98A CE1EC973 D975D982 DE79852D  75E4E1F8 4990BE00 0A94AA3A 4813C89F  *..Z...I.R.R......U.8.........H.*
00C00  DC5FA823 B1518893 A81DF9AF A84B8E00  0A86AA22 000D1518 22183538 38495138  *..........9.....................*
00C20  38687138 38381818 38283818 38583818  38189118 38383898 38383880 38883838  *.....................................*
00C40  38383878 17D81128 186811A6 0E820E82  0E880E88 0EE00EE0 192C11FA 0B760B76  *.....Q.....................*
00C60  0B7611A0 17D81176 0B7611A6 0B761176  0B7611A6 0B76119C 1862122C 0D8E0D8E  *.....Q.....................*
00C80  0E140E14 0F880F88 19D20B76 196A0B76  832073E4 4511D580 4D914F15 EC8C4478  *.........K.........U..N.........*
00CA0  4478B920 0CCA4118 1001490E 8810460B  980C011B 41B888C6 012341C8 9821BD20  *.....................H....*
00CC0  07406524 11A8B800 039A0CBE 0CFE0D24  0CBE0CBE 0CBE0D34 00000CFE 0CFE0D24  *. .....................*
00CE0  0CFE0D24 0CFE0D24 0CBE0D68 0D5E0D34  0D4E8020 488FEC82 A9CB800E AA134B1D  *.....................*
00D00  2C09CB10 E41EB40E 881A4315 E30FD308  4B95A857 EC08BE20 1B524699 A815BE00  *....U.......T.L.....................*
00D20  0A9CA867 BE000A7A 4B1DCB02 A83EBE00  1906A877 4B1D2507 DC9ACB12 BD20133A  *.....................*
00D40  461965C8 9889BD20 022E4597 A891BE00  0A90A897 E4032587 BE000A94 A8A12388  *...H.....................U.....*
00D60  4223BE00 10363288 BE000A90 BE000E0C  4D1AED02 A8B94D0D 2D894204 4D1CE5DF  *.....................V.*
00D80  4D9C258B 4DCDD502 2D894204 A8D10A00  8802A820 BE200EA6 673327C0 98160980  *......N......J.....................*
00DA0  0981672F 652D7581 65357589 6537758D  6539758F BE000DE2 E1FC4990 F8D6BF20  *.....................S....80..*
00DC0  0DD24B0D D31E2B89 4204BB20 1E044397  A862BF20 00C6BE00 0A9CE403 25874799  *.K..L.................F....U.....*
00DE0  B84C8404 85004591 408B408F 40954093  4D1FD507 4D9F481B 4D1CF884 E5DF4D9C  *. ..... . . . ...N.......8.V...*
00E00  DD82A808 4527E482 E5C045A7 BD2000C6  45996088 BF200E3C 4D0D2D89 42044B1C  *......U.V......F.....................*
00E20  D3204B9C 238B4D0D D5022D89 4204BD20  02304597 47998520 75F4B840 4097E403  *L.......N.................4.  .U.*
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00E40  25871148 218B4D1B FDF94D0D D5042D89   42044D1A ED06BD20 0A164597 BF000DDE  *.........9..N.....................*
00E60  4B1DC80E 4B0DD30E 28894204 BF201580   A89D4B0D D30A2B89 4204D402 BF201D0A  *......L.............L.....M.....*
00E80  A8ADBE00 0A9CA853 830C4B8E D1044990   031D4089 8808031F 3489049F A869049D  *.............J..... .............*
00EA0  C49F70C4 A8714122 00B04650 81881850   18489046 7018909B 70249180 90064780  *...D.............................*
00EC0  81C458FC 826E05EF 58870018 12FF4770   81DE989B 70249780 900658F0 826E05EF  *.D.O.....................O....*
00EE0  BE2C0EA6 62B364B1 8F2008B4 77018B7B   088067AF 750965B5 25097589 750D65B7  *.................................*
00F00  250D758D 750F65B9 250F758F 822C4580   6780531C 7330BA87 672F7501 65AD7681  *.................................*
00F20  5F0C6F8C 6D1AD5C4 6D9A6D1C D5406D9C   4D0D2D89 42044B1C D3204B9C D340E357  *......N.....N .........L...L T.*
00F40  BF0C0E24 4097491D C916E403 258711A8   218B0E01 88280881 BC200EA6 422FA831  *.... ...I.U.....................*
00F60  0E018812 4B0DD30A 2B894204 D402BF20   1DCA4799 A82D4E1C E6F74E9C A8354F10  *......L.....M..........W7......*
00F80  D7044F90 4431A9C7 4B1ACB02 AC194D1C   DD5A4223 83C0D31E 2B894204 BE00107E  *P.....................L........*
00FA0  BF000E34 82022388 83034B91 33A883C7   4395BE00 0A6283C0 D3082B89 4204BE00  *................G........L........*
00FC0  10728F0C 0E18BE00 107EE403 25874223   8000218B BF000DDE 4B15CB1A BB0005FA  *..........U.....................*
00FE0  230B33F8 33F8FBC4 FB72EB12 BE000A94   BE001032 B840CB82 A81FB800 00C64315  *...8.8.D.............. .......F..*
01000  EBC2A808 3708E707 72388832 47882718   7D00E403 258787C0 D7102F89 4204BE00  *.......X..........U.....P.......*
01020  10868000 2188BEC0 107EB840 BE000A76   A843E403 258785C0 2D894204 6088230B  *.......... ......U.............*
01040  33F833F8 FB1CFB9D E4032587 BB20103E   439985C0 D50A2D89 4204A83B E50FC50C  *.8.8....U..........N.......V.E.*
01060  9877E403 258785C0 2D894204 BE001072   AA35B920 07424B0C 31183118 1201B920  *..U.............................*
01080  C0264197 6088EB08 B2038812 B207882C   B2078806 92014395 60888200 A8C9CB92  *.................................*
010A0  D3804A91 35806780 BE000A62 53807680   A823D383 BA200FD8 4299A82D CB04D340  *L.................L....Q......L *
010C0  A821D347 A813D7E3 C3C80000 00000000   00000000 00000000 00000000 00000000  *..L...PTCH.....................*
010E0  00000000 00000000 00000000 00000000   000C0000 00000000 00000000 00000000  *.................................*
       LINE 01100 SAME AS ABOVE
01120  E2C9E2F7 F2F1F7F2 FF38BF20 136481C7   8303BD20 FDFF4B91 4195BE00 0A624B0D  *SIS72172.......G................*
01140  2B894204 8107218B 4B1DC320 8806BB20   02324397 E4032587 4B0DD310 2B894204  *..........C.........U.....L.....*
01160  A86A4891 4095E1FC 49908320 BE000AA2   BF2000C6 A8564A1F 83038581 D9928584  *.... .............F........R...*
01180  DA0ECA04 B8000B76 857CC302 CA82C303   FF31BF20 13648180 84FEA867 B6608886  *..........C...C.................*
011A0  BF2013CC A879BB20 02224397 FF26B670   BF201580 40958804 4D1FFD48 4B0DD30E  *..................... .........L.*
011C0  2A09E2FE 32388804 2B894204 47998520   75F4B840 E1FC4990 4B15CB06 CB84FFC6  *..S.............4. ............F*
011E0  A815BE00 0A4EFF82 A81D4513 D40CE5DF   458F4093 D1044990 A82DB660 8828FF0C  *.............M.V... .J..........*
01200  BF20133A BB200220 4397A851 4A014503   43C84381 4D824315 CB06A201 4A94A806  *.................................*
01220  4B11A301 4B91BE00 0A9CA85F C62098AD   409580C0 491FE1FE 419FBF20 1260A83D  *.............F... .............*
01240  D7E3C3C8 00000000 00000000 00000000   00000034 47F080DE E2D340F7 F2F1F7F0  *PTCH.................0..SL 72170*
01260  00C02060 10503070 08482868 18583878   04442464 1454B474 0C4C2C6C 9C5C3CFC  *.................................*
01280  02422262 12523272 0A4A2A6A 1A5A3A7A   06462666 965636F6 0E4E2E6E 1EDE3E7E  *.....................6........*
012A0  01412161 11513171 09492969 19593979   05452565 15553575 0D4D2D6D 1D5DBD7D  *.................................*
012C0  03432363 13533373 0B4B2B6B 1B5B3B7B   07472767 17573777 0F4F2F6F 9F5F3FFF  *.................................*
012E0  46194B1F DB1C4A10 E2FCB210 882AB248   8826B250 8822B270 881EC208 98044B1A  *........S.................B.....*
01300  FB826088 FC0AD402 B9201364 41996088   D7404793 E4FDA9CE BB20176A 63B88C4A  *......M.........P ..U...........*
01320  B50C8806 D7084793 60888800 0DB8D401   85FFBE20 13644699 A8FACC04 4F1FA9FC  *....P.........M.................0*
01340  BB200018 4397BF20 01002788 42042F09   E7FE2F89 BE0014DA 55089821 CC19A825  *.................X...............*
01360  BB0005FA E4FC4315 CB18A818 DB983108   E1F72148 897CA80E 85FFD401 A89AB80C  *....U.............7........M.....*
01380  0000CB8D EB1B4E10 CE9C471F DF11CFDD   A862B203 882A5178 E160E51F 15585508  *.............................V.....*
013A0  9890D58C A88CCB31 BB0005FA 4315471F   41882118 1D00DF27 B201CF82 B2029862  *..N.............. ...L.....U.....*
013C0  4D80BE20 1508A922 BB0005FA 40974B0D   D3142B89 4204E4FE 8500BB00 05FA4315  *.............7.....2...........*
013E0  CB02A802 CBB2EB02 A84A3108 E1F72148   9842A8F2 BB00C5FA 43154188 21181D00  *...P.................G...U....B..*
01400  B5DF88D7 471FFF9A EF94CD16 851FA802   851C5648 C704479F E4032587 A8C2CF82  *..V.................U...........*
01420  CD13E57F B9201260 51181D00 9866FF82   5648479F E4032587 EB48FA86 92014395  *. ........ .......L .......... ...*
01440  B840FA06 92014395 B8409201 EAA08200   D340CB22 84074395 4C910315 4C898808  *.......  ...D..L.........C.....*
01460  03173489 0497B840 049570C4 A80BD380   CB848403 A8212358 C3074395 BE201364  *....S...V.........W.........1..*
01480  A85C9201 F2073508 E5072548 9851BE20   14E6A84A CD068008 4893A86F FDF1FF94  *......P.X........P..............*
014A0  CD96A875 CD88D7C6 E7FE8600 A87DFD7F   D7C3A883 DD13A887 ED02A88D DD0F5648  *.................................*
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014C0  479F3E20 14CCA812 BB0C05FA 471FDF96   65C8860C 479FBE20 14E6E403 25874699  *.....WU.....*
014E0  B840BB0D 05FABE20 15784B1A E4FDEB8A   4B0DD316 2B894204 A8214B0D D31A2B89  *. .....U.....L.....L...*
01500  4204A82B BB0C05FA BB2C0220 43978E0D   14DA8201 41114F1F DF3CB501 883CB534  *.....*
01520  88C48308 A8028310 4B934A94 D0024191   D705E7FD 86C0479F BE000A9C BE201582  *.....P.X.....*
01540  F982A86B 800C4892 A8718506 8816B582   881AB595 8804C584 99430108 80008700  *9.....E.....*
01560  B8001176 D0018109 83804B95 E57F4D81   8202A84F BB0005FA BE000A9C BE0014DA  *.....V.....*
01580  40954910 E982A804 D1024990 4F1FDF02   CF0CC160 9804B800 0000B800 0000BB00  * ...Z...J.....A.....*
015A0  05FA4315 471FB920 02224197 E4032587   B9201260 51181C00 CF00980A FF065648  *.....U.....*
015C0  EF82D480 A86ECC06 81084993 A866E47F   FF14EC02 A8195648 FCB0FC06 D7C4CC82  *..M.....U.....P...*
015E0  E7FB479F B840EC11 EC94FF8E 800E8108   A82CCC93 D7034D1A DD1C800D A81ACC96  *X.... .....P.....*
01600  DC3FD705 E7FD8600 A82AFC1B DF88BE20   17064699 A857800C 49138802 D00EEF2E  *..P.X.....*
01620  4D10FD24 418F4093 D5044D90 D308BE20   15804699 479F4188 2118EB44 FAB6CB2A  *..... .N...L.....*
01640  1C809201 4395B840 D5014193 A8254193   B9200100 218B4204 2909E1FE 2989B920  *..... N.....*
01660  1E2C4197 BE20176A A839CBD8 1C809201   4395B840 FA16CB0F 1C809201 4395B840  *.....Q..... ..... *
01680  D208EA84 CB3EA8C6 CBBAA80E EA8C1C80   D380CBAC 4A919201 A80A1C80 D340CB20  *K.....L.....L ..*
016A0  4A918200 43954810 F8140311 40898808   03133489 0493B840 04910493 70C4B840  *.....8... ..... .....D. *
016C0  2358AA87 4810F814 EB084713 D60ED704   A8CE470F D60ED704 478FA806 4713D702  *.....8.....O.P.....O.P.....P.*
016E0  4793C204 8380EA82 8340A8B7 D0044890   4113E1DF D00C1108 8802D002 418F4093  *..B..... ..... .*
01700  A201EAE9 A877E403 25874315 471F5648   880A4513 D40ED508 45938600 EF32479F  *...Z..U.....M.N.....*
01720  BE2C1580 48104699 D208F80A FAC3FA45   BE000A9C B840D001 4890FA84 FA02B840  *.....K.8...C..... .....*
01740  A201EA86 D3804A91 AB0DD340 2358AB13   479FB920 1E2C4197 BF200100 278B4204  *....L.....L .....*
01760  2F09E7FE 2F89BE00 14DA481D 81FFC89D   811F5148 981FCC21 E4032587 4315A861  *..X.....H.....U.....*
01780  D811817F A815D7E3 C3C80000 00000000   00000000 00000000 00000000 00000000  *Q.....PTCH.....*
017A0  00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000  *.....*
017C0  00000000 00000000 00000000 309447E0   C2C9E2F7 F2F1F7F0 FF448303 4B9181C7  *.....BIS72170.....G*
017E0  41954B27 EB1EBB20 1E164397 4D0DD504   2D894204 BE201A30 4699BE00 0A628520  *.....N.....*
01800  75F4B840 E3F74A13 FA8CD304 4BA7BE20   1BD646A5 A81D4BA7 BE000A96 A821E103  *.4. T7....L.....O.....*
01820  1758D704 4F90860D 87C0478F BE000ABC   A8354D0D D50A2D89 4204BB20 1D0A4399  *..P.....N.....*
01840  8210BE0C 0A96D103 49908101 49934315   E2C44A91 EA848380 A8028340 4B95B800  *.....J.....S..... ....*
01860  011A4B27 CB82A96E 2A09E21E 98104B0D   D30A2A09 E2FE3238 88042B89 4204FF0C  *.....S.....L...S.....*
01880  82C74A94 BB201E0E 4397A88F E1FC4990   4B15CB04 CB82A806 BE000A4E FF90BB20  *.....*
018A0  1E0E4397 B11088AB 830A4B96 A8B18E00   0A9CA8B7 4B0DD30A 2B894204 BB201D0A  *.....L.....*
018C0  4399D402 E4032587 4315FA02 A802FA9A   EA8ED380 CB904A91 4B95BE00 0A4EA80A  *..M.U.....L.....*
018E0  D340CB02 A8112358 4B954B27 E3FD4BA7   DCB0BE00 0A76B800 011ABF20 0742633C  *L .....T.....*
01900  27182718 72014D0D D50A2D89 4204BB20   1D0A4399 8402E403 25874C27 E4FD4CA7  *.....N.....U.....U...*
01920  6088E403 2587BE00 0A94A837 2A09E21E   98104B0D D30A2A09 E2FE3238 88042B89  *..U.....S.....L...S.....*
01940  4204FF08 BB201E12 4397A94F 47134093   BE000A9C 4793A95B DCF1C392 98064B27  *..... .....1C.....*
01960  D3024BA7 801EB800 011C8380 4B954891   BEC00A62 BB200206 4397A97F 8001A81B  *L.....*
01980  4B15CB09 4D004327 CB02A81A 4B1A5348   DBC2A812 4629B920 07424B0C 31183118  *.....*
019A0  16816401 4A26ED04 FA08A818 FA16491B   D992C202 4C1DC410 4C9D4121 C024C133  *.....R.B...D.....A.*
019C0  41A1288E E28FE540 52584AA6 BE000A9C   A8DD4B27 CB84B800 0B76BD20 1E124597  *....S.V .....*
019E0  2C09E41E 98104D0D D50A2C09 E4FE5438   88042D89 4204FF02 A804D302 4BA7D102  *..U.....N...U.....L...J.*
01A00  499C8208 4A94AA0B D7E3C3C8 00000000   00000000 00000000 00000000 00000000  *.....PTCH.....*
01A20  00000000 00000000 C2D340F7 F2F1F7F2   BF201E16 479711A8 29894204 B92001AA  *.....BL 72172.....*
01A40  218B490D D1102989 4204481C EB0A85AA   BE0C1D34 BE001D34 4D20BE00 1D34BF20  *....J.....*
01A60  0ACA4797 4315EB04 CB11CB93 D4024B0D   D3142B89 4204BE00 1D34BE20 1A804699  *.....M...L.....*
01A80  4315EB32 EABACB3C 47882718 7D00411F   75B471BC CD38CDB6 BF201CC2 57187F0C  *.....B....*
01AA0  65287090 A828A86C A824A822 A8A0A8D8   A866A82A A9863708 E7072748 9837A892  *.....Q.....X.....*
01AC0  CB82A83D 4D20E403 2587A80E 4699E403   2587419F FA8E9201 E2074395 B840E4C3  *.....U.....U.....S.... U.*
01AE0  2587A811 FA02A813 EB15EA86 D380C89C   A8C4D340 CB164A91 0715880A 07177489  *.....L.....L .....*
01B00  40890497 A8310495 70C4A80D 2358A83B   11A0E4FD FC07A84B CB04CB82 A80AFA86  * .....D.....U.....*
01B20  A806EB04 A863FAC7 BE001ACC 47804315   27187D0C B5028808 A8C111A0 E4FDA808  *.....A..U...*
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01840  FC09411F 758471BC BE201BD6 A883BE0D   1B9A85FF 4B0DD312 2B894204 4B10D304  *...........O.........L.......L.*
01860  4B90BE20 1D0246A5 BE001D34 4E1AEE8A   4B0DD318 2B894204 A8084B0D D31A2B89  *..................L.........L...*
01880  42040400 4625A9AC BE001B9A 4D20BE00   1D34BE2C 1A7A409F A99A46A5 BE001ACC  *..M.................. .........*
018A0  4D1F3E00 1D344D1E 4625A988 4D20BE0D   1D344625 A97E4619 46A58510 BE001D34  *................................*
018C0  4D20A813 EB5CBE00 18B84F27 EF0DBE00   1ACCBE00 1D344315 EB26EAA0 CB294F1C  *................................*
018E0  EF084E16 96044E96 98354780 27187D00   411F75B4 71BCB510 8831A92F CBC9A823  *.............................I..*
01900  37084F07 2748982B BE00A90C BE201BBA   4F27D708 4FA7BF20 1E284797 A867CB14  *..X.............P..............*
01920  CB928510 E4032587 E7FB4FA7 BE201A7A   4699A95F FA82A817 FA77A81B 4F10B708  *....U...X.....................*
01940  897FEA92 A802FA28 BE001ACC 43154788   27187D00 E2032728 7D8085FF 4B0DD312  *.....................S.........L.*
01960  2B894204 BE001B66 BF201E1A 4797A896   CB04CB82 A82FEB31 A9B74519 FD98BE20  *................................*
01980  1A8056B0 881ABE20 1BD656B0 880C9501   45998002 A814B800 02C8BE20 1BBBA804  *.........O.............H.......*
019A0  BE201BAD 469945A5 800AB800 011C8301   4B93BE20 1B6C4699 BE201D06 46A5B800  *................................*
019C0  011A0002 020800C0 00000000 00000000   00C00C00 0000C000 00000000 00000000  *................................*
019E0  000A0000 00000000 08000000 00000010   00000000 0E000000 00040000 00000006  *................................*
01D00  0000BE00 0A9CBE00 1D344F20 7538880A   4F0DD70A 2F894204 A9B64910 E99EB148  *.................P.........Z...*
01D20  8834B13C 8826C110 982C8207 830C4395   BE201E30 E4032587 4699B840 F9084B15  *.......A.............U..... 9...*
01D40  CB33CBB5 A80AE1FE 4990A81D BE0C0A9C   D1024990 A82DBE00 1D344910 E98F4721  *.................J...........Z...*
01D60  6538896C 831E4B96 4A147538 881EE90A   4F27FF04 820CA86A A8B6E204 83004395  *..............Z..........r..S.....*
01D80  4B91BE00 CA8CD102 4990A856 E90CE403   2587C904 E2F74A94 A9B0BE00 1D344315  *......J.....Z.U...I.S7..........*
01DA0  5708E70F C70F982A FA889201 E2074395   AB83FA02 A80DEB0F EA86D380 CB90A804  *..X.G.......S.............L.....*
01DC0  D340CB0A 4A91BEC0 0A624315 A8252358   A829E204 92014788 27184921 71300D87  *L ..................S...........*
01DE0  A867472B D6205638 880ED720 57388808   E60F5648 983A8210 C9084F27 D7024FA7  *....O.....P.....W.......I...P...*
01E00  A80C4093 BF000A96 82078300 4395E403   2587BE20 1E3CA84A BE001D34 4F205748  *.. ............U..................*
01E20  980EBE00 1D344F20 574888A4 871E4F96   BE201E36 4699411F E4032587 75B471BC  *.........................U.......*
01E40  CD22CDA0 BB201CC2 53183B0C 22283090   A812A8AC A8F0A91E A9E4A9DA A97EA849  *.......B.............O...U......*
01E60  A9184699 419F4315 EA66CBC8 9201E207   47882718 7D80FA84 4A94B840 FA044A94  *..........H..S............ ....*
01E80  B840EAA4 D380CBA6 4A914395 4B10FB10   4B26CB4C 0311880A 03133489 40890493  *. ..L..................... ...*
01EA0  B8400491 70C4A80D D340CB02 A8272358   4395B840 CB02A84D 4910F91A 4F26D704  *. ...D..L ......... ......9...P.*
01EC0  4FA64713 D704D60E 47934788 27187D80   E4032587 A837B207 986F4713 D702A81B  *....P.O.........U...........P...*
01EE0  030D880A 030F3489 4089048F B8400480   70C4A80D FC14A895 E4032587 BE202002  *......... .... ...D......U......*
01F00  FC0A411F 758471BC A8A94619 11A8E4BD   E4032587 871E4F96 4F26E7F3 4FA64F10  *..............U.U.........X3....*
01F20  B792881A C77098C7 4F27FF25 46A5BE00   1E624315 D2084395 46254699 60884F27  *....G..G...........K...........*
01F40  D7024FA7 A8E5FC02 A8E7BE00 1E625308   E30FC30F 99274713 D60D4910 B1708806  *P....V...X......T.C.....O.......*
01F60  B192880A A8244B27 D3024BA7 A81C4B27   E3FD4BA7 A814FC02 A917BE00 1E625308  *.........L.......T..............*
01F80  E30FC30F 99574713 D60CD402 490DD10A   29894204 BE2C1D0A 46994315 48274910  *T.C.....O.M...J................*
01FA0  F9288170 882ED104 D208478F 40934097   4990E0FD 48A7E403 2587FA02 A93DFA82  *9.....J.K... . ........U.........*
01FC0  A941F904 BE000ABC B840B192 88084793   D101A825 F831831E 4B96A90D BE001E62  *..9..... ......J...8...........*
01FE0  B50288ED FC02A9B9 CD02CD82 A9BFDD02   A9C3E403 2587BE20 1F86A99B D402BE00  *.................CU.........M...*
02000  1D348510 8806BE00 2090A9A9 BE001D34   B5328819 BE002090 B5108814 B503881E  *................................*
02020  B526881A B51F880E B52D88B3 BE00207A   BE202002 A9D5BE00 2048409F AA0FC442  *.....................N.... ...D.*
02040  E4032587 BE201F86 46A5BE00 1E62411F   75B471BC 419FBEC0 1D34411F 51288804  *U...............................*
02060  BE00207A 46254F26 CF82AB39 E4032587   7508E50C E7F34FA6 AA194713 D60ED708  *.............U.....V.X3......O.P.*
02080  47934F26 D7084FA6 6088831E 4B96E4FD   FC09E403 2587411F 75B471BC 6088D7E3  *....P.........U...U...........PT*
020A0  C3C80C00 00000000 00000000 00000000   00C00000 00000000 00000000 00000000  *CH.............................*
020C0  00000000 00000000 00000000 00000000   00000000 00000000 00000000 0000000C  *................................*
020E0  00000000 00000000 00000000 00000000   00000000 00000000 C2C9E3F7 F2F1F7F0  *.........................BIT72170*
02100  472C8600 AAAE6709 FF8BD701 67898301   4344E77F 77016785 70888403 45246709  *..........P........X...........*
02120  E7E16789 E77F7101 61856A06 A9664720   6F87D780 4724BF20 213C6785 67C9FF98  *X...X.............P.............*
02140  A839472C 6F87D780 4724BF20 21506785   6709FF82 A84DC982 D92A8200 6B074324  *......P.............I.R........*
02160  33C86B87 434C8303 4344DF02 A84FB7A5   8802A855 E7E0D708 6789472C 86034724  *.H.....................X.P.......*
02180  6A06A910 472C8601 AA2ABC20 21946485   847FA80A 6709FF82 A891D936 55F0E080  *.........................R..O..*
021A0  0458F992 432CB4FF 98168202 43246B0E   34388810 A9108301 434484FF 432CA817  *..9............................*
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021C0  83C3A819 D70E5789 BC2C236A 64854114  B84CFFC2 A83BD250 A8BA6709 FF82A8D7  *....P.............  ....K........P*
021E0  870B4734 A9D0BF2D 2366A838 472C8603  4724C91B 87936F89 BF2C2206 67856F06  *.....................I.............*
02200  E7036F86 A80ABF20 22106785 87014744  D0C9FD82 E0FE55FC 8802AA02 6A06FABB  *X.....................O........*
02220  BF20234E 67850708 4734670D 63073758  678B67C9 FF9C7208 E21EB210 9935B216  *.........................S.......*
02240  98C2A93B D7016789 E77F72C1 62856A06  A83EF188 883AE90E C90C6709 FFB2A957  *....P...X.........l...Z.I.......*
02260  D906F990 A82E6A06 D250452C CD8D8400  4524A813 D2608501 4544A818 E1FEE7E0  *R.9.....K...........K.........X.*
0228C  D70ADF02 D7046F89 452C8402 45246A06  DA1FD835 C240CA02 A802E2BF DF82608B  *P...P.............Q.B ....S.....*
022A0  45646387 6703EFC2 B8406083 C72706A7  88C47683 B84006A5 B8406709 FF82A9B7  *......... ........... ... ......*
022CC  55FCC808 FD8C4114 658BB840 D480FD82  A8CD4308 DF0E4714 BF2023BE 67856AC6  *.OH........ M.....................*
022E0  638BB840 BD20236A 65856A06 A85FBF2D  22F66785 A8C0BF2D 230CF988 6785870B  *... .............6.........9.....*
02300  4734A8B2 6A06D22D 6A86A811 6709FF82  AA098501 4534C902 A89CA8A1 77C86FCE  *......K..............I......H..*
02320  77907790 77906507 5758578B BF20233C  67856307 E904C902 A8ABA8D7 870A4734  *.....................Z.I....P....*
02340  BF202412 67856709 E7FE6789 A868870A  47344114 D888BF20 22106785 B8406FC6  *.........X...........Q......... ..*
02360  D7806F86 A8118708 A81B6709 FF82AA67  BD2022BA 6585650D 658BA8BD 6709FF82  *P.....................................*
02380  AA79D91A 472C5580 88188603 47248503  4544650D 658BBF20 22BA6785 A8E5D250  *..R.........................VK.*
023AC  A9CFC816 85034544 BD2022BA 6585650D  658B8603 47244114 B8408602 A80BC806  *..H.....................  ....H.*
023C0  D48CE4BF 6C866E0F 88045578 BE85472C  86024724 5388BF20 237C6785 A985472C  *M.U...................................*
023E0  86034724 C9146F06 E7D36F86 5709D7D2  6789BC20 24086485 A8186709 FF82AAF7  *....I...X.....P.....................7*
02400  830B4334 A851D004 BC202412 64858701  4744D009 FD82E0FE 55F057F0 89F90108  *.....................0.0.9..*
02420  41344114 658BB840 BF202430 6785A87B  BF202436 A93B6709 FF82AB33 85034534  *.....  ..............................*
02440  A9C76709 FF82AB3F 472C8602 E78C4724  87014734 D902A8A3 AB3D6709 FF82AB57  *.G..........X.......R...........*
02460  BF2CDD0F 4734AB69 6709FF82 AB658720  4734670B E7C0FEC8 C902A806 E988C98A  *.....................X...I...Z.I.*
02480  A8CDD704 A806D708 A802D720 D602678B  87FF6307 E2BFAA37 6709FF82 AB95BF20  *..P...P...P...P.O.......S..........*
024A0  002F4734 670BE7C0 FE06C902 A82DE9AB  A8FD6709 FF82ABAF C98C6709 87C8650B  *......X...I...Z.........I....H..*
024C0  E5C0658B ABBD6307 870F6628 3768D730  4734A91F 6709FF82 ABD1BF20 000F4734  *V.............P..........J......*
024E0  C902A92F D902A933 E985C987 E7E16789  E77F7701 6785A947 D7E3C3C8 00000000  *I...R...Z.I.X...X.......PTCH....*
02500  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000  *................................*
02520  00000000 00000000 00000000 00000088  414CC802 6088B920 00104144 BB2008A0  *.....................H..............*
02540  93023201 24F89806 2909F98D A81B8802  A813BA20 002072E4 414CD806 B9200020  *.....8....9.............U..Q.....*
02560  414472F4 A83304A6 E3D9C3F7 F2F1F7F0  B9202000 7174712C D904D982 B840731C  *...4....TRC72170........R.R.. ..*
02580  32389806 23483248 2348BF20 08A07501  42389806 35389802 A8025380 7314BF20  *................................*
025A0  08AC9702 740146F0 884C980B 44014C0C  2438983C 43389838 852075E4 4C1BD984  *.......0.....................U..R.*
025C0  D440A802 E4BF4C9B 4D1DCDDC 852075F4  F4408833 9001A837 4D27CD02 A8134429  *M ..U...........44 ..............*
025E0  44014C1B D984D440 A802E4BF 4C9BA825  4D1BCDA1 A8557124 D90E0008 88068520  *....R.M ..U.............R........*
02600  75F4B840 A800A804 A800A80F B9202626  84088720 77E41201 23011603 13832681  *.4. .................U..........*
02620  91048C8F A8292608 A8022604 A809009C  CCBC009E 47130102 D9890104 E9100124  *.........................R...Z...*
02640  D9AD0126 E915471B CF84CCB8 A830BE0D  278087FF 1F90BE00 27181581 270B77F8  *R...Z.............................8*
02660  77F82E09 17831087 473C1785 47011789  4703178B 4705178D 4707178F CC864713  *.8.....................................*
02680  B8CC00A0 40190781 D984E944 6088633C  BE002700 8836632C B2018830 872077E4  *....  ...R.Z.....................U*
026A0  8E00278Q 872077F4 632C1381 DA0A634C  1385635C 1387A8C8 BB20FFFF 13851387  *.......4.....................*
026C0  633C1383 BE002718 BE002746 B80000FC  631CBE00 27008824 872077E4 BE002780  *.........................U....*
026E0  872077F4 630C1381 671C1783 BB20AAAA  13851387 BE002718 BE002746 B8000116  *...4...........................*
02700  BF200742 A8BE2718 7701FF88 74014F1B  E7406088 E7006088 470D1E91 470F4313  *.................X ..X.............*
02720  37D01793 47111795 47151797 47171799  4719179B 149F4F1D CF06471F 179D6088  *................................*
02740  4727179D 6088737C 1B900309 138933A8  070D8802 7A0C0711 88027B0C 138B33A8  *................................*
02760  07158802 7A0C0719 88027B0C 138D33A8  071D8802 7A0C0721 88027B0C 138F6088  *................................*
02780  B80027AC BF202801 E7E09720 7188A710  71827186 03883799 730C3398 3398A320  *........X.....................*
027A0  738AB920 27ACBB20 27803183 BF202813  71C29120 730A13B8 98047182 60887106  *................................*
027C0  A809AA55 617C2038 88B52718 A8C90000  00000000 00000000 00000000 00000000  *.............I..................*
027E0  00000000 0000E2E3 C1D9E340 E3D9C1C3  C5C00000 00000000 00000000 00000000  *......START TRACE..............*
02800  00000000 00000000 00000000 00000000  000029C0 00002820 00003FE0 00000000  *................................*
02820  4401B320 1FA6023D 00010000 B3000000  10B3000C 080300C7 02321364 008E0926  *.....................G..........*
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02840  41FF933F 00000000 1FA6023D 0DC1A6EB    FFB30000 C80C0009 02321364 008E0926   *.............................*
02860  40FC933F 00000000 1FA6023D 0D01A6EB    FFB3000C 08000009 013214E6 008F0926   * ...........................W....*
02880  40018E00 00000000 1FA6023D 0D01A6EB    FFB30000 080C0009 01321578 C08F0926   * .............................*
028A0  2000B30C FFFFFFFF 00010000 00B30000    10B30C00 0C000009 C0001580 008F0926   *.............................*
028C0  8000B301 AAAAAAAA 00000000 0C000000    08B30000 0C000009 FF001580 008F0926   *.............................*
028E0  4403B320 1F1F1F3D 00010000 B30C0000    10B30000 080300C7 02321364 008F0926   *.......................G.........*
02900  41FF933F 00000000 1F1F1F3D 0D01A6EB    FFB30000 0800000B 02321364 008FC926   *.............................*
02920  40FC933F 00000000 1F1F1F3D 0D01A6EB    FFB30000 0800010B 023213F8 C08F0926   * ............................8....*
02940  40FC933F 00000000 1F1F1F3D 0D01A6EB    FFB3000C 0800020B 013213F8 C08F0926   * ............................8....*
02960  40FC933F 00000000 1F1F1F3D 0D01A6EB    FFB30000 0800020B 643214E3 008F0926   * ............................T....*
02980  40018E00 00000000 1F1F1F3D 0D01A6EB    FFB30C00 0800020B 63321578 008F0926   * .............................*
029A0  2000B30C FFFFFFFF 00010000 00B30000    18B30C00 0C00020B 00001580 008F0926   *.............................*
029C0  8000B306 AAAAAAAA 00000000 00000000    08B30000 0C00020B 00001580 008F0926   *.............................*
029E0  8000B327 AAAAAAAA 00000000 00000000    08B30000 7C000000 000000C6 008F0926   *.............................F....*
02A00  40018100 00000000 00000000 00000000    FFB30000 80000000 02300E3C 008F0926   * .............................*
02A20  40038100 00000000 00000000 00000000    FFB30000 80000000 0A160E60 008F0926   * .............................*
02A40  2000B30C FFFFFFFF 00010000 00B30000    10B30C00 84000000 00001580 008F0926   *.............................*
02A60  8000B301 AAAAAAAA 00000000 00000000    08B30000 84000000 00001580 008F0926   *.............................*
02A80  4403B320 1F1F1F48 00010000 B3000000    10B30000 080300C7 02321364 008F0926   *.......................G.........*
02AA0  41FF933F 00000000 1F1F1F48 00000000    FFB30000 0800000B 01321364 008F0926   *.............................*
02AC0  40FC933F 00000000 1F1F1F48 00000000    FFB30000 0800010B 013213F8 008F0926   * ............................8....*
02AE0  40FC933F 00000000 1F1F1F48 00000000    FFB30000 0800020B 643213F5 008F0926   * ............................5....*
02B00  40FC933F 00000000 1F1F1F48 00000000    FFB30000 0800020B 633214E6 008F0926   * ............................W....*
02B20  40018E00 00000000 1F1F1F48 00000000    FFB30000 0800020B 62321578 008F0926   * .............................*
02B40  2000B30C FFFFFFFF 00010000 00B30000    18B30C00 0C00020B 00001580 008F0926   *.............................*
02B60  8000B306 AAAAAAAA 00000000 00000000    08B30000 0C00020B 00001580 008F0926   *.............................*
02B80  40348F00 00000000 1F1F1F48 00000000    FFB30000 3000020B F91E133A 008F0926   * .........................9.......*
02BA0  2000B30C FFFFFFFF 00010000 00B30000    18B30C00 3400020B 00001582 008D0926   *.............................*
02BC0  8000B304 AAAAAAAA 00000000 00000000    08B30000 3400020B 00001582 008D0926   *.............................*
02BE0  8001B301 00011F48 20010000 0000B300    10B30C00 2400020B 00001582 008D0926   *.............................*
02C00  2100B30C FFFFFFFF 00010000 00B30000    18B30C00 2400020B 00001582 008D0926   *.............................*
02C20  8000B302 AAAAAAAA 00000000 00000000    08B30000 2400020B 00001582 008D0926   *.............................*
02C40  406D8F00 00000000 1F1F1F48 00000000    FFB30000 10000000 EC1E1580 008D0926   * .............................*
02C60  40548F00 00000000 5B1F1F48 00000000    FFB30000 10000100 F41E15A2 6D8D0926   * ............................4....*
02C80  40548F00 00000000 5B151F48 00000000    FFB30000 10000200 FE1E15A2 398D0926   * .............................*
02CA0  40208F00 00000000 5B151548 00000000    FFB30000 10000300 FD1E15A2 6D8D0926   * .............................*
02CC0  80048315 5B151502 000100B3 00000000    10B30000 10030480 022215A2 4D8D0926   *.............................*
02CE0  40408F00 00000000 5B151502 00000000    FFB30000 10000400 FC1E15A2 4D8D0926   *  ...........................*
02D00  40738F00 00000000 5B151502 01000000    FFB30000 10000500 F11E15A2 0D8D0926   * ..........................1....*
02D20  40078F00 00000000 5B151502 01670000    FFB30000 10000600 FF1E15A2 7E8D0926   * .............................*
02D40  40678F00 00000000 5B151502 01677000    FFB30000 10000700 FE1E15A2 798D0926   * .............................*
02D60  80048367 01677073 000100B3 00000000    10B30000 10070040 022215A2 1E8D0926   *.......................  .....*
02D80  40138F00 00000000 5B151502 01677073    FFB30000 10000000 F21E15A2 1E8D0926   * ........................2....*
02DA0  40708F00 00000000 64151502 01677073    FFB30000 10000100 FC1E15A2 0D8D0926   * .............................*
02DC0  40408F00 00000000 64071502 01677073    FFB30000 10000200 F81E15A2 7D8D0926   *  ..........................8....*
02DE0  40738F00 00000000 64070102 01677073    FFB30000 10000300 FD1E15A2 3D8D0926   * .............................*
02E00  80048307 64070167 000100B3 00000000    10B30000 10030480 022215A2 4E8D0926   *.............................*
02E20  40078F00 00000000 64070157 01677073    FFB30000 10000400 FF1E15A2 4E8D0926   * .............................*
02E40  40678F00 00000000 64070167 70677073    FFB30000 10000500 FF1E15A2 498D0926   * .............................*
02E60  40138F00 00000000 64070167 70737073    FFB30000 10000600 FB1E15A2 2E8D0926   * .............................*
02E80  40708F00 00000000 64070167 70736473    FFB30000 10000700 F81E15A2 3D8D0926   * ............................8....*
02EA0  80048373 70736407 000100B3 00000000    10B30000 10070040 022215A2 4D8D0926   *.......................  .....*
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02EC0   40408F00 00000000 64070167 70736407   FFB30000 10000000 FC1E15A2 4D8D0926   *  ..............................*
02EE0   40628F00 00000000 01070167 70736407   FFB30000 10000100 FB1E15A2 0D8D0926   *  ..............................*
02F00   40408F00 00000000 01230167 70736407   FFB30000 10000200 FC1E15A2 6F8D0926   *  ..............................*
02F20   40328F00 00000000 01230167 70736407   FFB30000 10000300 FA1E15A2 2F8D0926   *  ..............................*
02F40   80048323 01230126 00010083 00000000   10B30000 10030480 022215A2 1D8D0926   *..............................*
02F60   40688F00 00000000 01230126 70736407   FFB30000 10000400 001E15A2 1D8D0926   *  ..............................*
02F80   40528F00 00000000 01230126 6B736407   FFB30000 10000500 FE1E15A2 768D0926   *  ..............................*
02FA0   40328F00 00000000 01230126 6B256407   FFB30000 10000600 FF1E15A2 248D0926   *  ..............................*
02FC0   402C8F00 00000000 01230126 6B252607   FFB30000 10000700 FD1E15A2 168D0926   *  ..............................*
02FE0   80048325 6B252602 00010083 00000000   10B30000 10070040 022215A2 368D0926   *..............................*
03000   405E8F00 00000000 01230126 6B252602   FFB30000 10000000 FB1E15A2 368D0926   *  ..............................*
03020   40688F00 00000000 3D230126 63252602   FFB30000 10000100 01221706 688D0926   *  ..............................*
03040   407F8F00 000000C0 3D230126 6B252602   FFB30000 10000100 1E2C176A 008D0926   *  ..............................*
03060   80018323 3D230126 00010083 00000000   10B30C00 14080980 1E2C1580 008D0926   *..............................*
03080   2100B30C FFFFFFFF 00010000 00B30000   10B30C00 14000900 00001580 008D0926   *..............................*
030A0   80008301 AAAAAAAA 00000000 00000000   08B30000 14000900 00001580 008D0926   *..............................*
030C0   44018320 76230126 00010000 83000000   10B30000 080300C7 02321364 008D0926   *.........................G....*
030E0   41FF933F 00000000 76230126 6B252602   FFB30000 08000009 01321364 008D0926   *..............................*
03100   4037932D 00000000 76230126 6B252602   FFB30000 08000009 013214E6 008D0926   *  ...........................W....*
03120   40018E00 00000000 76230126 63252602   FFB30000 08000009 64321575 008D0926   *  ..............................*
03140   2000B30C FFFFFFFF 00010000 00B30000   18B30C00 0C000009 00001580 008D0926   *..............................*
03160   8000B302 AAAAAAAA 00000000 00000000   08B30000 0C000009 00001580 008D0926   *..............................*
03180   407C8F00 00000000 76230126 6B252602   FFB30000 10000000 F81E1580 008D0926   *  ........................8.....*
031A0   407F8F00 00000000 1F230126 6B252602   FFB30D00 10000100 1E2C176A 7C8F0926   *  ..............................*
031C0   8001B323 1F230126 00010083 00000000   10B30D00 14080980 1E2C1580 7C8F0926   *..............................*
031E0   2100B30D FFFFFFFF 00010000 00B30000   10B30D00 14000900 00001580 7C8F0926   *..............................*
03200   8000B301 AAAAAAAA 00000000 00000000   08B30000 14000900 FF001580 7C8F0926   *..............................*
03220   40048320 1F1F1F16 00010000 83000000   10B30000 080300C7 02321364 7C8F0926   *  .........................G....*
03240   40048320 DFDFDFDF 00010000 83000000   10B300C0 08070040 02321364 7C8F0926   *  ..............................*
03260   41FF933F 00000000 1F1F1F16 DFDFDFDF   FFB30000 08000000 01321364 7C8F0926   *..............................*
03280   40FC933F 00000000 1F1F1F16 DFDFDFDF   FFB30000 08000100 013213F8 7C8F0926   *  ........................8.....*
032A0   40FC933F 00000000 1F1F1F16 DFDFDFDF   FFB30000 08000200 643213F5 7C8F0926   *  ........................5.....*
032C0   40FC933F 00000000 1F1F1F16 DFDFDFDF   FFB30000 08000300 633213F8 7C8F0926   *  ........................8.....*
032E0   40048320 DFDFDFDF 00010000 83000000   10B30000 08030480 633213F8 008E0926   *  ........................8.....*
03300   40B4932D 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000400 633213F8 008E0926   *  ........................8.....*
03320   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000500 62321364 008E0926   *..............................*
03340   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000600 61321364 008E0926   *..............................*
03360   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000700 61321364 008E0926   *..............................*
03380   40048320 DFDFDFDF 00010000 83000000   10B30000 0807004C 61321364 008E0926   *  ..............................*
033A0   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000000 60321364 008E0926   *..............................*
033C0   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000100 5F321364 008E0926   *..............................*
033E0   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000200 5F321364 008E0926   *..............................*
03400   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000300 5E321364 008E0926   *..............................*
03420   40048320 DFDFDFDF 00010000 83000000   10B30000 08030480 5E321364 008E0926   *  ..............................*
03440   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000400 5D321364 008E0926   *..............................*
03460   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000500 5D321364 008E0926   *..............................*
03480   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000600 5C321364 008E0926   *..............................*
034A0   41FF933F 00000000 DFDFDFDF DFDFDFDF   FFB30000 08000700 5B321364 008E0926   *..............................*
034C0   40048320 DFDF5B5E 00010000 83000000   10B30000 08070040 5B321364 008E0926   *  ..............................*
034E0   41FF933F 00000000 DFDFDFDF DFDF5B5E   FFB30000 08000000 5B321364 008E0926   *..............................*
03500   41FF933F 00000000 DFDFDFDF DFDF5B5E   FFB30000 08000100 5A321364 008F0926   *..............................*
03520   41FF933F 00000000 DFDFDFDF DFDF5B5E   FFB30C00 08000200 59321364 008E0926   *..............................*
```

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03540  41FF933F 00000000 DFDFDF[illegible]FDF5B5E   FFB30000 080C0300 59321364 008E0926  *.....*
03560  4004B320 5E5E5E5E 00010000 B3000000   10B30000 08030480 59321364 008E0926  *.....*
03580  41FF933F 00000000 5E5E5E5E DFDF5B5E   FFB30000 08000400 58321364 008E0926  *.....*
035A0  41FF933F 00000000 5E5E5E5E DFDF5B5E   FFB30000 08000500 57321364 008E0926  *.....*
035C0  41FF933F 00000000 5E5E5E5E DFDF5B5E   FFB30000 08000600 57321364 008E0926  *.....*
035E0  406D933B 00000000 5E5E5E5E DFDF5B5E   FFB30000 08000700 563213F8 6D8E0926  *.....8....*
03600  4004B320 5E5E5E5E 00010000 B3000000   10B30000 08070040 563213F8 D08E0926  *.....8....*
03620  40BD932F 00000000 5E5E5E5E 5E5E5E5E   FFB30000 08000000 553213F8 D08E0926  *.....8....*
03640  40BD932F 00000000 5E5E5E5E 5E5E5E5E   FFB30000 08000100 553213F8 6D8E0926  *.....8....*
03660  40BD932F 00000000 5E5E5E5E 5E5E5E5E   FFB30000 08000[illegible] 543213F8 D08E0926  *.....8....*
03680  40BD932F 00000000 5E5E5E5E 5E5E5E5E   FFB30000 08000300 533213F8 6D8E0926  *.....8....*
036A0  4004B320 5E5E5E5E 00010000 B3000000   10B30000 08030480 533213F8 D08E0926  *.....8....*
036C0  40BD932F 00000000 5E5E5E5E 5E5E5E5E   FFB30000 08000400 533213F8 D08E0926  *.....8....*
036E0  40BD932F 00000000 5E5E5E5E 5E5E5E5E   FFB30000 08000500 523213F8 6D8E0926  *.....8....*
03700  40BD932F 00000000 5E5E5E5E 5E5E5E5E   FFB30000 08000600 513213F8 D08E0926  *.....8....*
03720  40BD932F 00000000 5E5E5E5E 5E5E5E5E   FFB30000 08000700 513213F8 6D8E0926  *.....8....*
03740  4004B320 1515C201 00010000 B3000000   10B30000 08070040 513213F8 D08E0926  *.....8....*
03760  40BD932F 00000000 5E5E5E5E 15150201   FFB30000 08000000 503213F8 D08E0926  *.....8....*
03780  40BD932F 00000000 5E5E5E5E 15150201   FFB30000 08000100 4F3213F8 6D8E0926  *.....8....*
037A0  40BD932F 00000000 5E5E5E5E 15150201   FFB30000 08000200 4F3213F8 D08E0926  *.....8....*
037C0  40BD932F 00000000 5E5E5E5E 15150201   FFB30000 08000300 4E3213F8 6D8E0926  *.....8....*
037E0  4004B320 E7F0F3E4 00010000 B3000000   10B30000 08030480 4E3213F8 D08E0926  *...X03U.....8....*
03800  40BD932F 00000000 E7F0F3E4 15150201   FFB30000 08000400 4D3213F8 D08E0926  *.....X03U.....8....*
03820  40549335 00000000 E7F0F3E4 15150201   FFB30000 08000500 4D3213F8 848E0926  *.....X03U.....8....*
03840  40549335 00000000 E7F0F3E4 15150201   FFB30000 08000600 4C3213F8 D08E0926  *.....X03U.....8....*
03860  402C9328 00000000 E7F0F3E4 15150201   FFB30000 08000700 4B3213F8 FC8E0926  *.....X03U.....80...*
03880  40C4B320 0701E7F0 00010000 B3000000   10B30000 08070040 4B3213F8 308E0926  *.....X0.....8....*
038A0  40C09330 00000000 E7F0F3E4 0701E7F0   FFB30000 08000000 4B3213F8 308E0926  *.....X03U..X0.....8....*
038C0  401C9327 00000000 E7F0F3E4 0701E7F0   FFB30000 08000000 4A3213F8 2C8A0926  *.....X03U..X0.....8....*
038E0  4073933C 00000000 E7F0F3E4 0701E7F0   FFB30000 08000100 493213F8 5F8A0926  *.....X03U..X0.....8....*
03900  40079321 00000000 E7F0F3E4 0701E7F0   FFB30000 08000200 493213F8 588A0926  *.....X03U..X0.....8....*
03920  40679339 00000000 E7F0F3E4 0701E7F0   FFB30000 08000300 483213F8 3F8A0926  *.....X03U..X0.....8....*
03940  4004B320 F3E40701 00010000 B3000000   10B30000 08030480 483213F8 2C8A0926  *...3U.....8....*
03960  40139324 00000000 F3E40701 0701E7F0   FFB30000 08000400 473213F8 2C8A0926  *.....3U....X0.....8....*
03980  401F9327 00000000 F3E40701 0701E7F0   FFB30000 08000400 473213F8 338E0926  *.....3U....X0.....8....*
039A0  4070933C 00000000 F3E40701 0701E7F0   FFB30000 08000500 463213F8 438E0926  *.....3U....X0.....8....*
039C0  40C09330 00000000 F3E40701 0701E7F0   FFB30000 08000600 453213F8 838E0926  *.....3U....X0.....8....*
039E0  401C9327 00000000 F3E40701 0701E7F0   FFB30000 08000600 453213F8 9F8A0926  *.....3U....X0.....8....*
03A00  4073933C 00000000 F3E40701 0701E7F0   FFB30000 08000700 443213F8 EC8A0926  *.....3U....X0.....8....*
03A20  4004B320 23010E04 00010000 B3000000   10B30000 08070040 443213F8 EB8A0926  *.....8....*
03A40  40079321 00000000 F3E40701 23010E04   FFB30000 08000000 433213F8 EB8A0926  *.....3U.....8....*
03A60  40679339 00000000 F3E40701 23010E04   FFB30000 08000100 433213F8 8C8A0926  *.....3U.....8....*
03A80  40139324 00000000 F3E40701 23010E04   FFB30000 08000200 423213F8 9F8A0926  *.....3U.....8....*
03AA0  401F9327 00000000 F3E40701 23010E04   FFB30000 08000200 413213F8 808E0926  *.....3U.....8....*
03AC0  4070933C 00000000 F3E40701 23010E04   FFB30000 08000300 413213F8 F08E0926  *.....3U.....80...*
03AE0  40048320 76040B0D 00010000 B3000000   10B30000 08030480 413213F8 308E0926  *.....8....*
03B00  40C09330 00000000 76040B0D 23010E04   FFB30000 08000400 403213F8 308E0926  *.....8....*
03B20  40629338 00000000 76040B0D 23010E04   FFB30000 08000500 3F3213F8 528E0926  *.....8....*
03B40  40CC9330 00000000 76040B0D 23010E04   FFB30000 08000600 3F3213F8 928E0926  *.....8....*
03B60  4038932E 00000000 76040B0D 23010E04   FFB30000 08000700 3E3213F8 AA8E0926  *.....8....*
03B80  4004B320 0115CD76 00010000 B3000000   10B30000 08070040 3E3213F8 BA8E0926  *.....8....*
03BA0  40109324 00000000 76040B0D 0115CD76   FFB30000 080000C0 3D3213F8 BA8E0926  *.....8....*
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03BC0  40379320 00000000 75040B0D 01150D76    FFB30000 0800C100 3D3213F8 8D8E0926  * ..........................8....*
03BE0  40109324 00000000 75040B0D 01150D76    FFB30000 08000200 3C3213F8 9D8E0926  * ..........................8....*
03C00  40689330 00000000 76040B0D 01150D76    FFB30000 08000300 3B3213F8 F58E0926  * ..........................85...*
03C20  40048320 150B7608 00010000 B3000000    10B30000 08030480 3B3213F8 AD8E0926  * ..........................8....*
03C40  40589336 00000000 150B7608 01150D76    FFB30000 08000400 3B3213F8 AD8E0926  * ..........................8....*
03C60  40C09330 00000000 150B7608 01150D76    FFB30000 08000500 3A3213F8 6D8E0926  * ..........................8....*
03C80  40549335 00000000 150B7608 01150D76    FFB30000 08000600 393213F8 398E0926  * ..........................8....*
03CA0  40589336 000C0000 150B7608 01150D76    FFB30000 08000700 393213F8 618E0926  * ..........................8....*
03CC0  40048320 0D01A6EB 00010000 B30C0000    10B30000 08070040 393213F8 568E0926  * ........................ ...8....*
03CE0  40379320 0C000000 150B7608 0D01A6EB    FFB30000 08000000 383213F8 568E0926  * ..........................8....*
03D00  40549335 00000000 150B7608 0D01A6EB    FFB30000 08000100 373213F8 028E0926  * ..........................8....*
03D20  4068933A 00000000 150B7608 0D01A6EB    FFB30000 08000200 373213F8 6A8E0926  * ..........................8....*
03D40  40379320 00000000 150B7608 0D01A6EB    FFB30000 08000300 363213F8 5D8E0926  * ..........................8....*
03D60  44C4B320 A5A6023D 00010000 B3000000    10B30000 08030480 363213F8 558E0926  *.....................................8....*
03D80  40089322 00000000 A5A6023D 0D01A6EB    FFB30000 0800041C 353213F8 558E0926  * ..........................8....*
03DA0  40589336 00000000 A5A6023D 0D01A6EB    FFB30000 0800051C 353213F8 0D8E0926  * ..........................8....*
03DC0  40C09330 00000000 A5A6023D 0D01A6EB    FFB30000 0800061C 343213F8 CD8E0926  * ..........................8....*
03DE0  401C9327 00000000 A5A6023D 0D01A6EB    FFB30000 0800061C 333213F8 D18A0926  * ..........................8J...*
03E00  4032932C 00000000 A5A6023D 0D01A6EB    FFB30000 0800071C 333213F8 E38A0926  * ..........................8T...*
03E20  406B933A 00000000 A5A6023D 0D01A6EB    FFB30000 0800001C 323213F8 888A0926  * ..........................8....*
03E40  40529334 00000000 A5A6023D 0D01A6EB    FFB30000 0800011C 313213F8 DA8A0926  * ..........................8....*
03E60  4032932C 00000000 A5A6023D 0D01A6EB    FFB30000 0800021C 313213F8 E88A0926  * ..........................8Y...*
03E80  401F9327 00000000 A5A6023D 0D01A6EB    FFB30000 0800021C 303213F8 F78E0926  * ..........................87...*
03EA0  40209328 00000000 A5A6023D 0D01A6EB    FFB30000 0800031C 2F3213F8 D78E0926  * ..........................8P...*
03EC0  40DE9337 00000000 A5A6023D 0D01A6EB    FFB30000 0800031C 2F3214CC 098E0926  * ..............................................*
03EE0  40099322 00000000 A5A6023D 0D01A6EB    FFB30000 0800031C 2E3214E6 008E0926  * ..........................W....*
03F00  40018E00 00000000 A5A6023D 0D01A6EB    FFB30000 0800031C 2D321578 008E0926  * ..............................................*
03F20  2000B30C FFFFFFFF 00010000 00B30000    10B30C00 0C00031C 00001580 008E0926  *.....................................*
03F40  800CB302 AAAAAAAA 00000000 00000000    08B30000 0C00031C 00001580 008E0926  *.....................................*
03F60  40378F00 00000000 A5A6023D 0D01A6EB    FFB30000 10000000 01201580 008E0926  * ..............................................*
03F80  407F8F00 00C00000 75A6023D 0D01A6EB    FFB30C00 10000100 1D2C176A 008E0926  * ..............................................*
03FA0  800183A6 76A6023D 00010083 00000000    10B30CC0 14080980 1D2C1580 008E0926  *.....................................*
03FC0  210CB30C FFFFFFFF 00010000 00B30000    18B30C00 14000900 00001580 008E0926  *.....................................*
03FE0  8000B301 AAAAAAAA 00000000 00000000    08B30000 14000900 00001580 008E0926  *.....................................*
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```
IFL103I 3705 OBF HAS BEEN DUMPED SUCCESSFULLY
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   DUMP3705                                        DELETED
IEF285I   VOL SER NOS= MVT21C.
IEF285I   SYS72256.T034902.SV000.DUMPBF.R0000141          SYSOUT
IEF285I   VOL SER NOS= SYSLNG.
IEF285I   SYS72256.T034902.RV000.DUMPBF.S0000142          SYSIN
IEF285I   VOL SER NOS= SYSIMS.
IEF285I   SYS72256.T034902.RV000.DUMPBF.S0000142          DELETED
IEF285I   VOL SER NOS= SYSIMS.
```

LAB PROJECT - CONSOLE EXERCISE (4-1)

Objective

Upon completion of this project, the student, using the available support documentation, should be able to:

1. Use the 3704/3705 Control Panel to:
   a. Obtain additional information about error conditions.
   b. Display pertinent registers and data areas.
   c. Enable the 3704/3705 and IPL the 3704/3705 Emulation Program.
   d. Dump the 3704/3705 Emulation Program
   e. Activate/deactivate FE traces that are available.

Time required to complete this project averages 1.1 hours.

Tools, Test Equipment, and Documentation

3704/3705 Principles of Operation
3704/3705 Operator's Guide

Directions

You will IPL the 3704/3705 and execute a series of steps to familiarize you with the 3704/3705 console. Your instructor will schedule your time for this hands-on project. Prior to going into the machine room, preview the Operator's Guide on the procedures you will be executing.

Step 1 - Bring- Up

Several items must be performed before loading the 3704/3705. Using the 3704/3705 Operator's Guide and referencing the Principles of Ops manual do the following in preparation for IPL.

2 - 5 min
- Power On
- Activate the Control Panel
- Enable the Channel Interface/s
- Lamp Test
- Clear Storage 2 - 28

Step 2 - IPL

5 - 10 min IPL of the 3704/3705 constitutes basically two steps. First, the 3704/3705 itself must be put into IPL state; second, the 3704/3705 EP must be loaded into the 3704/3705 via the utility program.

- Using the procedure in the Operator's Guide IPL and load the 3704/3705 EP.

2-10/12

Step 3 - Displaying

Section C of the Op. Guide describes the function and location of the various lights, buttons and switches you will be using.

2 - 5 min

- Display Register 4 in program level 3

FD83 5A3C 0001 = 0C

- Store FFFF into this register. Reset the above address and restart the machine.

5 min

Display the core location X'800'. Starting at this address, display and record below the next 16 half words. Use the static display facility.

923E, 1233, 4780, 9486, 9204, 1008, 58F0, C03C

D202, 4004, F004, 58F0, 959E, 05EF, 12FF, 4770

5 - 10 min

- Display the CCB and BCB/ICW for the line you got from your instructor.
  Use the Dynamic Display Facility. Display only 16 half words of each control block.

CCB: _____

_____

ICW/BCB: _____

_____

2 - 5 min

- Using the Dynamic Display, display storage location X'0100'. Record the data in this full word:

_____

- This is an _____ instruction, using external register _____.

Step 4 - Display Error Conditions

10 min

- Use Set Address and Display Storage procedures to display the Level 1 Log Error Halfword entries. Refer to the 3704/3705 EP PLM for starting location of this log area: _____

_____.

- Record the logtable entries here:

_____

_____

- Activate the CE trace facility. Activate Trace for all lines. Refer to Operators Guide.

Step 5 - Dumping the 3705

An error condition will be forced to set up for dumping the 3704/3705.

5 min

- Your instructor will invoke an error condition in your 3704/3705.
- Display 3704/3705 status and dynamic functions to verify the failure using the 3704/3705 panel operating procedure. Record pertinent information below.

_____

_____

10 min

- Using the Dump Utility dump the 3704/3705 and keep the dump copy for future use.

Step 6 - Finish

- Collect your paraphenalia and return to the classroom. You now may use your dump and dump analysis techniques to isolate and correct this failure.

OPEN-REVIEW-DATA FLOW

1. hardware; bit service
2. false
3. a. 3705 assembler
   b. 3705 loader utility
   c. 3705 dump utility
   d. 3705 Emulation Program generation procedure
4.

	No.	Component Type
a.	5	S
b.	3	P
c.	7	S
d.	12	S
e.	10	P
f.	1	H
g.	8	H/C
h.	4	H
j.	11	H
k.	11	C
l.	6	H/C
m.	2	H
n.	9	H

5.

	S	C
a.	4	8,11
b.	7	4,11
c.	1	10
d.	5	4,11
e.	6	4,11
f.	9	2,9
g.	2	10,8,11
h.	8	6,11
j.	3	10,1

6. c, e

SYSGEN PROCEDURES

1. a. 4
   b. 6
   c. 7
   d. 5
   e. 1
   f. 3
   g. 2

EP OVERVIEW AND SYSTEM LAYOUT (INCLUDES TRACE)

1. a. Interface Control Program (ICP)
   b. Line Control Program (LCP)
   c. Level 1 Error Routines

2. a. SNOQ, ICP
   b. DSOQ, LCP
   c. SOQ, SSOQ
   d. Character Service Queue
   e. DSIQ, ICP

3. True

4. a. 3
   b. 6
   c. 1
   d. 2
   e. 5
   f. 4

5. b, d, e

6. a, c, e, f, d

7. a. BUILD, LINETRC=(YES, NO)
   b. Dial low address into BC switches, dial high address into DE switches. Function switch setting on 2, hit interrupt key.

IPL AND CONTROL PANEL FUNCTIONS

1. The following should be lined out:

a.	A Reg	h.	SDR
b.	B Reg	k.	Z Reg
g.	SAR		

LEVEL 1 FUNCTIONS

1. Address Compare Panel Interrupt

2. a. Program Check L2 or L3.
   b. Type 1 CA Check.
   c. CCU Check

3. a. Channel Bus-In Parity
   b. In/Out Instruction
   c. CCU Outbus Parity
   d. Local Storage Parity

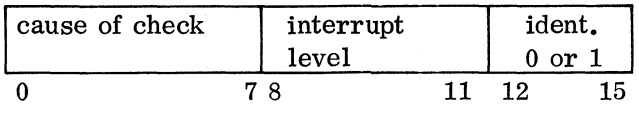
4. d

5. False

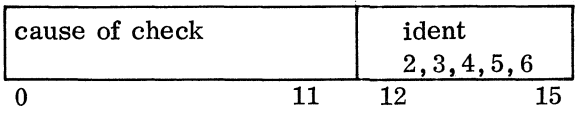
6. a. -1
   b. -4
   c. -3
   d. -2
   e. -5
   f. -6
   g. -7

7. 7DE, the address of the last entry in the table.

8. a.



   b.



INTERFACE CONTROL PROGRAM

1. Program Interrupt

2. a. -8
   b. -1
   c. -6
   d. -4
   e. -3
   f. -2
   g. -5
   h. -7

3. CYAIS - initial selection; Initial Command Execution - ICE

4. Initial Selection; Data Service Transfer

5. Timer

6. Queue scan

LINE CONTROL PROGRAM - TYPE 2 SCANNER

1. a. 3
   b. 4
   c. 2
   d. 6
   e. 5
   f. 1
   g. 8

2. c. Monitor for a control character (C) , (D) , or (B) .

3. b. Move character from ICW to data buffer.
   c. Recognize two consecutive SYN characters.
   d. Update the BCC accumulation.

LINE CONTROL PROGRAM - TYPE 1 SCANNER

1. True

2. 06F0

3. Line Vector

4. a. -4
   b. -2
   c. -5
   d. -1
   e. -6
   f. -7
   g. -3

5. X'7'

6. a. Scan all lines 4 times without bit service required;
   b. or scan 4 enabled high priority lines without bit service required;
   c. or a combination of the above 2 events.

7. False. Bits are sent to the line.

8. OUTPUT X'46' restart scanner and set Char Service Request.

9. Bit Control Block.

SOFT/HARDWARE SERVICE APPROACH

1. Customer, Hardware CE, Hardware

2. a, c, d, e, g, h, j, k

3. 3705 Dump (microfiche)
   Trace Facility
   Halfword Log Message

4. True

5. a. True

APPENDIX A

PROGRAM DIRECTORY

For use with

Version 1 Modification Level 1

of

IBM 3705 OS SYSTEM SUPPORT PROGRAMS
(360H-TX-035)

This directory contains information concerning the material and procedures associated with this program.

TABLE OF CONTENTS

BASIC PROGRAM DOCUMENTATION (Documents included in this transmittal.)

No Basic Program Dooumentation (SRLs, PLMs) is included in this transmittal. Note that the Emulator Program Generation and Utilities SRL and the Operators Guide SRL are included as part of Basic Program Documentation with the Emulator Program.

ORDERABLE REFERENCE MATERIAL (These documents may be ordered by contacting your IBM representation.)

IBM 3705 Communication Controller
Assembler Language
GC30-3003

This manual describes the assembler language for the 3705 Communication Controller.

IBM 3705 Communication Controller
Principles of Operation SRL
GC30-3004

This manual describes the hardware operation and requirements essential to programming the IBM 3705 Communication Controller.

IBM 3705 Communication Controller
Introduction
GA27-3051

This manual contains introductory information on both the hardware and software components of the 3705 Communication Controller.

IBM 3705 Communication Controller
Emulator Program Generation and Utilities SRL
GC30-3002

This manual describes the language and procedures for generating an Emulator Program tailored to specific user requirements. In addition it describes the operation of the Loader program used to load the 3705 with the generated Emulator program and the Dump program which can be invoked to dump the 3705 in the event of a suspected malfunction.
This manual is included as part of Basic Program Documentation with the Emulator Program.

IBM 3705 Communication Controller
Operators Guide
GA27-3055-0 TNL GN27-3110

This manual describes the operators interaction with the 3705 Communication Controller.
This manual is included as part of Basic Program Doocumentation with the Emulator Program.

The machine readable material is distributed on a distribution tape reel (DTR).

The table below describes the material.

EXTERNAL IDENTIFIER	DESCRIPTION	TAPE FORMAT	MAX BLK
BT01-1 9/800 or BT02-1 9/1600	DTR (360H-TX-035). OS/SSP Programs. Object modules for 3705 Assembler Loader, Dump, and Initial Test. Macro Definitions for EP Stage 1 generation.	9 track, unlabeled EBCDIC 800/1600 BPI. 1 file	3440

OS/SSP: The OS/SSP is installable on any S/360 or S/370 that supports a minimum MFT or MVT system. In addition, at least one nine track tape drive is required.

The OS/SSP is supported for attachment to a release 19 or later version of OS/360.

Details of the auxiliary storage requirements are contained in the installation instruction section of this document. The primary storage requirements for the OS/SSP are as follows:

For MFT, 44K is required for all job steps, except the linkage editor steps. For the linkage editor steps, the minimum partition depends on the amount of main storage required by the level F linkage editor installed on the system. This may be 44K, 88K, or 128K. For MVT a minimum region of 136K is required.

Note that these are the requirements to support installation of the package. They are not necessarily identical to the requirements for execution of each program in the package. This information is contained in the Emulator Program Generation and Utilities SRL, GC30-3002, and Assembler Language SRL, GC30-3003.

This program will be maintained through the distribution of sequentially numbered program releases. A Version release replaces the entire program code; a Modification release generally replaces only the changed portions of the program.

The initial availability of a program is called Version 1, Modification Level 0. Each subsequent version release raises the version level by one and resets the modification level to zero.

Version and modification releases are made available in one of two ways:

1. Some program releases are sent automatically by the Program Information Department (PID) to all users.

2. All other program releases are sent when ordered by the customer. Ordering instructions are sent to users by PID.

This type I extension program is currently classified "Service Classification A". Contact your IBM Marketing Representative for information concerning available program services.

To report any difficulties encountered in the use of this program and to obtain a correction, an Authorized Program Analysis Report (APAR) should be submitted. APARs should be submitted to the following address:

APAR Processing
IBM Corporation
Dept. G95
P.O. Box 12275
Research Triange Park
North Carolina 27709

INSTALLATION INSTRUCTIONS
3705 OS/SSP and EP

I. Introduction

The 3705 Program Package consists of up to three components: OS/SSP (360H-TX-035), DOS/SSP (360H-TX-036), and EP (360H-TX-033). OS/SSP is used with OS systems; DOS/SSP is used with DOS systems; the EP is system independent and is used with both OS and DOS systems. The OS/SSP is required in order to install the EP on an OS system. These instructions describe the installation procedures for the OS/SSP and the EP.

II. Procedure

A. Preliminary

Prior to installing the program package (the OS/SSP and the EP) on an OS system, the following must be done:

1. Scratch and reallocate SYS1.MAC3705 and SYS1.OBJ3705. Space requirements are given below. These data sets must be cataloged. Scratch the following members of SYS1.LINKLIB and compress it if necessary.

IFKASM	IFKF8	IFKMAC
IFKF1	IFKF2	IFKF3
IFKF3E	IFKRTA	IFKFI
IFKF7	IFKFPP	IFKERR
IFLREAD	IFLDUMP	IFLOADRN
IFL3705A	IFL3705B	IFL3705D

2. Space requirements for SYS1.MAC3705 and SYS1.OBJ3705 follow:

	2311 Tracks		2314 Tracks		3330 Tracks	
	Mac	Obj	Mac	Obj	Mac	Obj
SSP+EP	170	40	85	20	60	14

3. SYS1.LINKLIB must be catalogued. Assure that additional space of 70 2311 tracks, 35 2314 tracks, or 23 3330 tracks is available.

4. The JOB card on this tape is:
```
//BLD3705  JOB (IFG,G96,060,1),PGMRNME,
//  MSGLEVEL=(1,1)
```
If your OS system will not accept this JOB card it must be replaced. Replacement can be accomplished by using the IBM utility program IEBGENER. Note that the JOB card is contained on two card images.

B. Start Reader

1. Start a reader on a 9 track tape drive with the following command: s rdr,xxx,dcb=(blksize=3440,bufl=3440,recfm=fb),region=52k where xxx is the address of the tape drive. A blocking reader may be used if desired.

2. Mount OS/SSP DTR on the tape drive when the mount message appears at the console. When this reader closes, a job called BLD3705 will start. The job causes all SSP modules to be moved to the appropriate libraries.

3. After completion of the job BLD3705, the EP tape may be installed. File 1 consists of macros; file 2 consists of object modules. To install this tape, the program UPDT3705 must be used. UPDT3705 was installed in SYS1.LINKLIB by UPDT3705. The blocksizes set by UPDT3705 are 3520 for SYS1.MAC3705 and 400 for SYS1.OBJ3705. An example of the JCL required to install the EP tape follows:

```
//jobname JOB required parameters
//stepname EXEC PGM=UPDT3705
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=SYS1.MAC3705,DISP=OLD
//SYSIN DD UNIT=2400,LABEL=(1,NL),VOL=SER=EPTAPE,
//       DISP=(OLD,PASS),DCB=(LRECL=80,BLKSIZE=80,
//       RECFM=FB)
//stepname EXEC PGM=UPDT3705
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=SYS1.OBJ3705,DISP=OLD
//SYSIN DD UNIT=2400,LABEL=(2,NL),VOL=SER=EPTAPE,
//       DISP=(OLD,KEEP),DCB=(LRECL=80,BLKSIZE=80,
//       RECFM=FB)
```

4. At the completion of step 3, all desired 3705 program package modules and macros are in the appropriate libraries. The 3705 Assembler, Loader, and Dump can now be invoked as OS job steps. The 3705 System Generation procedure can be used to build an Emulator Program as stated in the EP Generation and Utilities SRL.

C. OS UCB Considerations

The 3705 is accessed through the host system by the Loader and Dump through a UCB allocated to the 3705. An unused UCB with the appropriate device address may be modified to describe the 3705 as follows:

Change UCBETI to X'00',
UCBATI to X'00', and
UCBTYP to X'50004015'.

If no UCB with the appropriate address exists, an I/O sysgen may be done to include it, after which the above modification is performed. Note that the UCB being modified must not represent a device being used for something else or a device in a unitname class that would cause it to be allocated without specific reference.

The above procedure must be followed if the 3705 is to be used with any release prior to 21.6. If you do an OS system generation for release 21.6 or later, you may specify UNIT=3705,ADAPTER=CA1 on the IODEVICE macro in order to provide a UCB for the 3705.

D. Messages

The following messages may appear when installing the EP tape:

IFL903 nnnnn FOUND IN DIRECTORY, MODULE/MACRO REPLACED

Explanation: A module or macro named nnnnn was found in the library and replaced.

IFL904 nnnnn NOT FOUND IN DIRECTORY, MODULE/MACRO ADDED

Explanation: A module or macro named nnnnn was added to the library.

IFL905 OUTPUT DIRECTORY FULL, JOB TERMINATED

Explanation: The directory of the output library is full.

System Action: The job is terminated.

User Response: Allocate more directory blocks for the library and rerun the job.

IFL906 PERMANENT I/O ERROR - STOW MACRO, JOB TERMINATED

Explanation: An I/O error has occurred while attempting to stow a member of the library.

System Action: The job is terminated.

User Response: Reallocate the libraries and rerun the job. If the problem recurs, do the following before calling IBM:

Obtain a listing of the VTOC for the packs on which the libraries are allocated.

Have the listings and console sheet associated with the job available.

IFL909I SYSPRINT COULD NOT BE OPENED, JOB TERMINATED

Explanation: Self-explanatory.

System Action: This message is written on the console. The job is terminated.

User Reponse: Before calling IBM have the listings and console sheet associated with the job available.

IFL911 xxxxx COULD NOT BE OPENED, JOB TERMINATED

Explanation: Self-explanatory.

System Action: The job is terminated.

User Response: If SYSUT1 could not be opened, insure that the data set is catalogued. If the problem recurs, have the listings and console sheet available before calling IBM.

PROGRAM DIRECTORY

For use with

Version 1 Modification Level 1

of

IBM 3705 DOS SYSTEM SUPPORT PROGRAMS (360H-TX-036)

This directory contains information concerning the material and procedures associated with this program.

TABLE OF CONTENTS

No Basic Program Documentation (SRLs, PLMs) is included in this transmittal. Note that the Emulator Program Generation and Utilities SRL and the Operators Guide SRL are included as part of Basic Program Documentation with the Emulator Program.

ORDERABLE REFERENCE MATERIAL (These documents may be ordered by contacting your IBM representative.)

IBM 3705 Communication Controller
Assembler Language
GC30-3003

This manual describes the assembler language for the 3705 Communication Controller.

IBM 3705 Communication Controller
Principles of Operation SRL
GC30-3004

This manual describes the hardware operation and requirements essential to programming the IBM 3705 Communication Controller.

IBM 3705 Communication Controller
Introduction
GA27-3051

This manual contains introductory information on both the hardware and software components of the 3705 Communication Controller.

IBM 3705 Communication Controller
Emulator, Program Generation and Utilities SRL
GC30-3002-1

This manual describes the language and procedures for generating an Emulator Program tailored to specific user requirements. In addition it describes the operation of the Loader program used to load the 3705 with the generated Emulator program and the Dump program which can be invoked to dump the 3705 in the event of a suspected malfunction.
This manual is included as part of Basic Program Documentation with the Emulator Program.

IBM 3705 Communication Controller
Operators Guide
GA27-3055-0 TNL GN27-3110

This manual describes the operators interaction with the 3705 Communication Controller.
This manual is included as part of Basic Program Documentation with the Emulator Program.

The machine readable material is distributed on a disposable tape reel (DTR).

The table below describes the material.

EXTERNAL IDENTIFIER	DESCRIPTION	TAPE FORMAT	MAX BLK
BT01-02 9/800 or BT02-02 9/1600	DTR (360H-TX-036). DOS/SSP Programs. Object modules for 3705 Assembler Loader, and Dump. Macro definitions for EP Stage 1 generation, Core image modules for Initial Test.	9 track, unlabeled, EBCDIC 800/1600 BPI. 1 file.	3440

The minimum machine requirements to support the installation supports a minimum DOS system. In addition, at least one nine track tape drive is required.

The DOS/SSP is supported for attachment to a release 24 or later version of DOS/360. In addition, it is supported for attachment to a release 27 or later version of DOS/370.

Details of the auxiliary storage requirements are contained in the installation instruction section of this document. The primary storage requirements for the DOS/SSP is a minimum partition of 10K.

Note that these are the requirements to support installation of the package. They are not necessarily identical to the requirements for execution of each program in the package. This information is contained in the Emulator Program Generation and Utilities, SRL, GC30-3002-1, and the Assembler Language SRL, GC30-3003.

This program will be maintained through the distribution of sequentially numbered program releases. A Version release replaces the entire program code; a Modification release generally replaces only the changed portions of the program.

The initial availability of a program is called Version 1, Modification Level 0. Each subsequent version release raises the version level by one and resets the modification level to zero.

Version and modification releases are made available in one of two ways:

1. Some program releases are sent automatically by the Program Information Department (PID) to all users.

2. All other program releases are sent when ordered by the customer. Ordering instructions are sent to users by PID.

This type I extension program is currently classified "Service Classification A". Contact your IBM Marketing Representative for information concerning available program services.

To report any difficulties encountered in the use of this program and to obtain a correction, an Authorized Program Analysis Report (APAR) should be submitted. APARs should be submitted to the following address:

APAR Processing
IBM Corporation
Dept. G95
P.O. Box 12275
Research Triange Park
North Carolina 27709

INSTALLATION INSTRUCTIONS
3705 DOS/SSP and EP

I. Introduction

The 3705 Program Package consists of up to three components: OS/SSP (360H-TX-035), DOS/SSP (360H-TX-036) and EP (360H-TX-033). OS/SSP is used with OS systems; DOS/SSP is used with DOS systems; the EP is system independent and is used with both OS and DOS systems. These instructions describe the installation procedures for the DOS/SSP and EP.

II. Procedure

A. Preliminary

Prior to installing the program package (the DOS/SSP and the EP), the following must be done:

Assure that sufficient space exists on the core image library, the private relocatable library and the private source library. (You may wish to allocate a separate private relocatable library and a private source statement library on which to place the 3705 components for the sysgen.

Components	2311 Tracks			2314 Tracks		
	Rel.	Src.	CI	Rel.	Src.	CI
DOS/SSP+EP	150	120	60	75	60	30

Components	3330 Tracks		
	Rel.	Src.	CI
DOS/SSP+EP	50	40	18

B. Deblocking

Since the DOS/SSP DTR is blocked, it must be deblocked in order to use it as a SYSIN tape. This tape may be deblocked by using a DOS file-to-file utility. (See the SRL IBM 360 Disk and Tape Operating Systems Utility Program Specifications, GC24-3465). An example follows:

```
// JOB DEBLOCK TO TAPE
// ASSGN SYS004,X'182'        assign SYS004 to input tape
// ASSGN SYS005,X'183'        assign SYS005 to output tape
// UPSI 10100000              unlabeled tapes for input and output
// EXEC TPTP
// UTT TR,FF,A=(80,3440),B=(80,80),IR,OR
// END
/&
```

C. Start Up

1. Issue the command: ASSGN SYSIN, X'xxx' where xxx is the address of the tape drive where the deblocked tape is to be mounted.

Note: The DOS/SSP tape contains one DOS job. Each file of the EP tape contains one job. If you require accounting information on the JOB card or if you wish to enter other JCL, eg, DLBL and EXTENT cards for private libraries, you may forward space one record with the MTC command to bypass the JOB card which is on the tape. A different JOB card and other JCL may be entered from the console or the card reader prior to assigning SYSIN to the tape.

2. Mount the deblocked tape on the tape drive when the intervention required message appears. A job called BLD3705 will start. It causes all SSP object modules to be placed in the private relocatable library and the SSP macros (Stage I Sysgen) to be placed in the private source statement library.

3. When all of the jobs on the deblocked tape have completed, an intervention required message will appear on the console. Remove the deblocked tape and mount the EP DTR. When the tape is mounted, send EOB from the system console. A job called BLDEPMAC will start. This job places EP Stage II sysgen macros in the private source statement library. At the end of this job, an intervention required message will appear on the console. Send EOB and a job called BLDEPOBJ will start. This job will place the EP object modules in the private relocatable library.

4. After BLDEPOBJ has finished, another intervention required message will appear on the system console. At this point, issue a command to assign SYSIN to its normal device. A 3705 system generation may now be performed.

   Note: If more than one tape drive is available, the EP tape may be mounted on the additional drive. When the SSP DTR processing is completed, and intervention required message will appear on the system console. Issue the command: ASSGN SYSIN, X'xxx' where xxx is the tape drive where the EP DTR is mounted. Then send EOB from the console and BLDEPMAC will start. Processing of this tape continues as above.

5. Prior to loading the 3705 for the first time, the Initial Test module must be moved into a direct access file which the 3705 Loader can access. The space required for the direct access file for initial test is 5 3330 tracks, 7 2314 tracks, or 14 2311 tracks. The DOS program, CSERV, must be used to create this file. The following job can be used:

```
// JOB INITTEST
// DLBL IJSYSPH, other parameters
// EXTENT SYSPCH, other parameters
   ASSGN SYSPCH, X'xxx'
```

```
// EXEC CSERV
   PUNCH IFU3705D
/*
/&
```

Note: In order to load the 3705 using initial test, the host DOS system must have the interval timer allocated to the background partition.

D. DOS PUB Considerations

The 3705 is accessed from the host DOS system by the Loader and Dump through a 2701 PUB. At either sysgen or IPL time, a 2701 PUB must be included in the system for the appropriate address.

PROGRAM DIRECTORY

For use with

Version 1 Modification Level 1

of

IBM 3705 EMULATOR PROGRAM (360H-TX-033)

This directory contains information concerning the material and procedures associated with this program.

TABLE OF CONTENTS

BASIC PROGRAM DOCUMENTATION (Documents included in this transmittal.)

IBM 3705 Communication Controller
Emulator Program Generation and Utilities SRL
GC30-3002

This manual describes the language and procedures for generating an Emulator Program tailored to specific user requirements. In addition, it describes the operation of the Loader program used to load the 3705 with the generated Emulator program and the Dump program which can be invoked to dump the 3705 in the event of a suspected malfunction.

IBM 3705 Communication Controller
Operators Guide
GA27-3055

This manual describes the operators interaction with the 3705 Communication Controller.

ORDERABLE REFERENCE MATERIAL (These documents may be ordered by contacting your IBM representative.)

IBM 3705 Communication Controller
Assembler Language
GC30-3003

This manual describes the assembler language for the 3705 Communication Controller.

IBM 3705 Communication Controller
Principles of Operation SRL
GC30-3004

This manual describes the hardware operation and requirements essential to programming the IBM 3705 Communication Controller.

IBM 3705 Communication Controller
Introduction
GA27-3051

This manual contains introductory information on both the hardware and software components of the 3705 Communication Controller.

The machine readable material is distributed on a DTR.

The table below describes the DTR:

EXTERNAL IDENTIFIER	DESCRIPTION	TAPE FORMAT	MAX BLK
BT01-02 9/800 or BT02-02 9/1600	DTR (360H-TX-033). Object modules for 3705 EP. Macro definitions for EP Stage 2 generation.	9 track, unlabeled EBCDIC 800/1600 BPI. Tape mark between object modules and macros.	80

Note that in order to create an operational Emulator Program, you must also have either the OS/SSP (360H-TX-035) or the DOS/SSP (360H-TX-036). Each of these programs is available from the Program Information Department (PID).

The host machine requirements to support the installation of the EP depends upon whether it's to be attached to an OS or DOS system:

OS: With OS, the EP is installable on any S/360 or S/370 that supports a minimum MFT or MVT system. In addition, at least one nine track tape drive is required. Note that in order to create an operational EP with OS, the OS/SSP (360H-TX-035) is required.

DOS: With DOS, the EP is installable on any S/360 or S/370 that supports a minimum DOS system. In addition, at least one nine track tape drive is required. Note that in order to create an operational EP with DOS, the DOS/SSP (360H-TX-036) is required.

The EP is supported for attachment to a release 24 or later version of DOS and a release 19 or later version of OS.

The storage requirements depend upon whether the EP is installed on an OS or DOS system:

Primary Storage Requirements

OS: For MFT, 44K is required for all job steps except the linkage editor steps. For the linkage editor steps, the minimum partition depends on the amount of main storage required by the level F linkage editor installed on the system. This may be 44K, 88K, or 128K. For MVT a minimum region of 136K is required.

DOS: Minimum partition is 10K.

Auxiliary Storage Requirements

See installation instructions for OS/SSP and DOS/SSP.

Note that these are the requirements to support installation of the package. They are not necessarily identical to the requirements for execution of each program in the package. This information is contained in the Emulator Program Generation and Utilities SRL, GC30-3002-1, and the Assembler Language SRL, GC30-3003.

This program will be maintained through the distribution of sequentially numbered program releases. A Version release replaces the entire program code; a Modification release generally replaces only the changed portions of the program.

The initial availability of a program is called Version 1, Modification Level 0. Each subsequent version release raises the version level by one and resets the modification level to zero.

Version and modification releases are made available in one of two ways:

1. Some program releases are sent automatically by the Program Information Department (PID) to all users.

2. All other program releases are sent when ordered by the customer. Ordering instructions are sent to users by PID.

This type I extension program is currently classified "Service Classification A". Contact your IBM Marketing Representative for information concerning available program services.

To report any difficulties encountered in the use of this program and to obtain a correction, an Authorized Program Analysis Report (APAR) should be submitted. APARs should be submitted to the following address:

APAR Processing
IBM Corporation
Dept. G95
P.O. Box 12275
Research Triangle Park
North Carolina 27709

INSTALLATION INSTRUCTIONS
3705 Emulator Program

In order to install and generate an operational EP on an OS system, the OS/SSP (360H-TX-035) is required.

In order to generate an operational EP on a DOS system, the DOS/SSP (360H-TX-036) is required.

Detailed instructions for installing the EP on an OS system are provided in the Program Directory for the OS/SSP; detailed instructions for installing the EP on a DOS system are provided in the Program Directory for the DOS/SSP. The OS/SSP and DOS/SSP are orderable from the Program Information Department (PID).

APPENDIX B - 3704/3705 EMULATION PROGRAM DATA FLOW AND INSTRUCTION CODE

LIST OF FOIL ILLUSTRATIONS

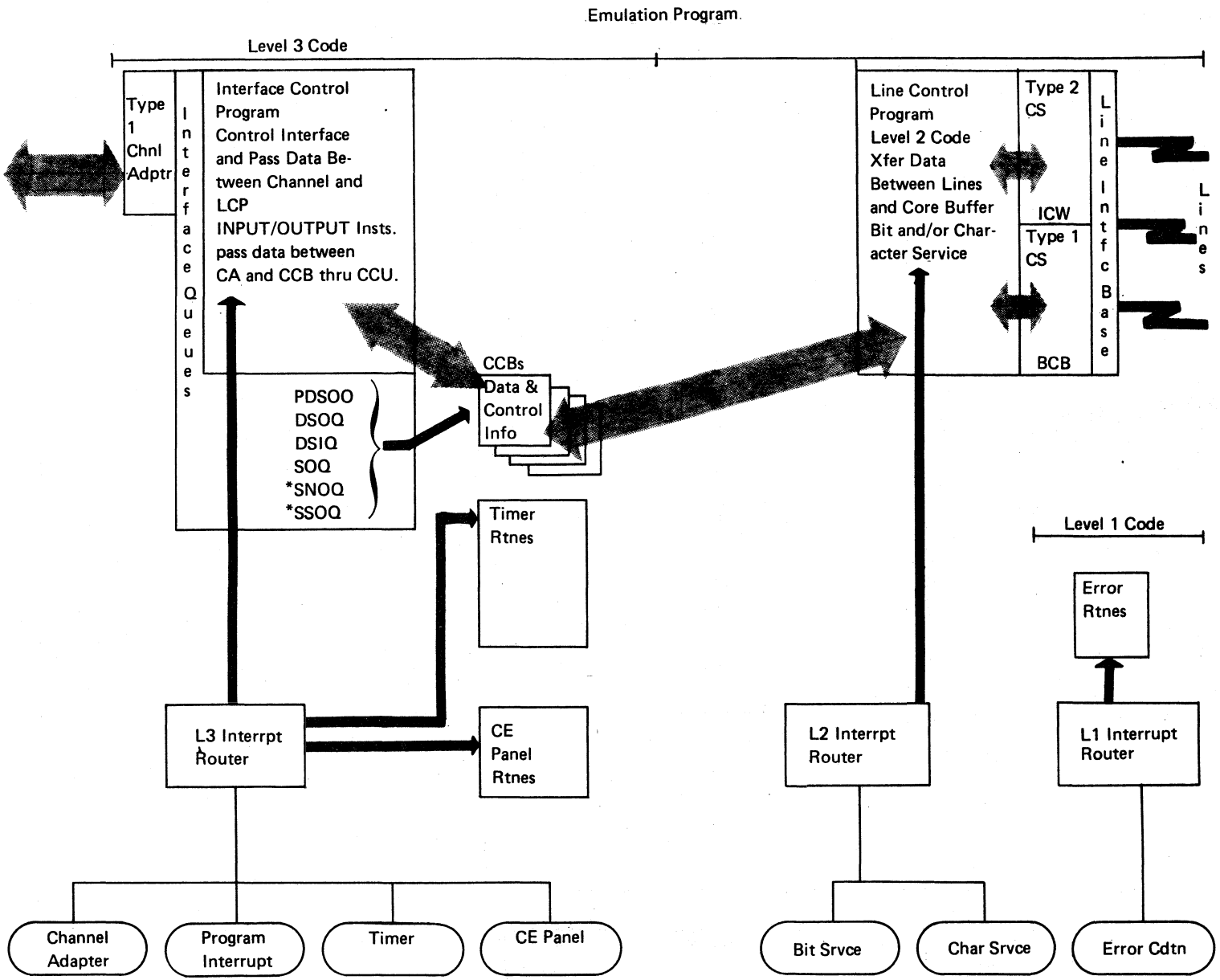

Emulation Program
Level 3 Code
Type 1 Chnl Adptr
Interface Queues
Interface Control Program Control Interface and Pass Data Between Channel and LCP INPUT/OUTPUT Insts. pass data between CA and CCB thru CCU.
PDSOO
DSOQ
DSIQ
SOQ
*SNOQ
*SSOQ
CCBs
Data & Control Info
Timer Rtnes
L3 Interrpt Router
CE Panel Rtnes
Channel Adapter
Program Interrupt
Timer
CE Panel
Line Control Program Level 2 Code Xfer Data Between Lines and Core Buffer Bit and/or Character Service
Type 2 CS
ICW
Type 1 CS
BCB
Line Intfc Base
Lines
L2 Interrpt Router
Bit Srvce
Char Srvce
Level 1 Code
Error Rtnes
L1 Interrupt Router
Error Cdtn

Table I

(D_2)

(D_1)	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	Table III								Table II							
1																
2																
3																
4																
5																
6																
7																
8	LRI								BZL							
9	ARI								BCL							
A	SRI								B							
B	CRI								Table IV							
C	XRI								BB							
D	ORI															
E	NRI															
F	TRM															

Table III

(D_4)

(D_3)	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	*	LH	L	LH	OUT	LH	L	LH	LCR	LH	L	LH	IN	LH	L	LH
1	ICT								ACR							
2	*								SCR							
3	STCT								CCR							
4	BALR								XCR							
5									OCR							
6	*								NCR							
7									LCOR							
8	LHR	STH	ST	STH		STH	ST	STH	LR	STH	ST	STH		STH	ST	STH
9	AHR								AR							
A	SHR								SR							
B	CHR								CR							
C	XHR								XR							
D	OHR								OR							
E	NHR								NR							
F	LHOR								LOR							

(D_3) Table II

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
IC								STC							

Table IV

(D_3)

0	1	2	3	4	5	6	7	8	A	B	C	D	E	F
BAL	*	LA	*	EXIT	*			BCT						

Four Bytes

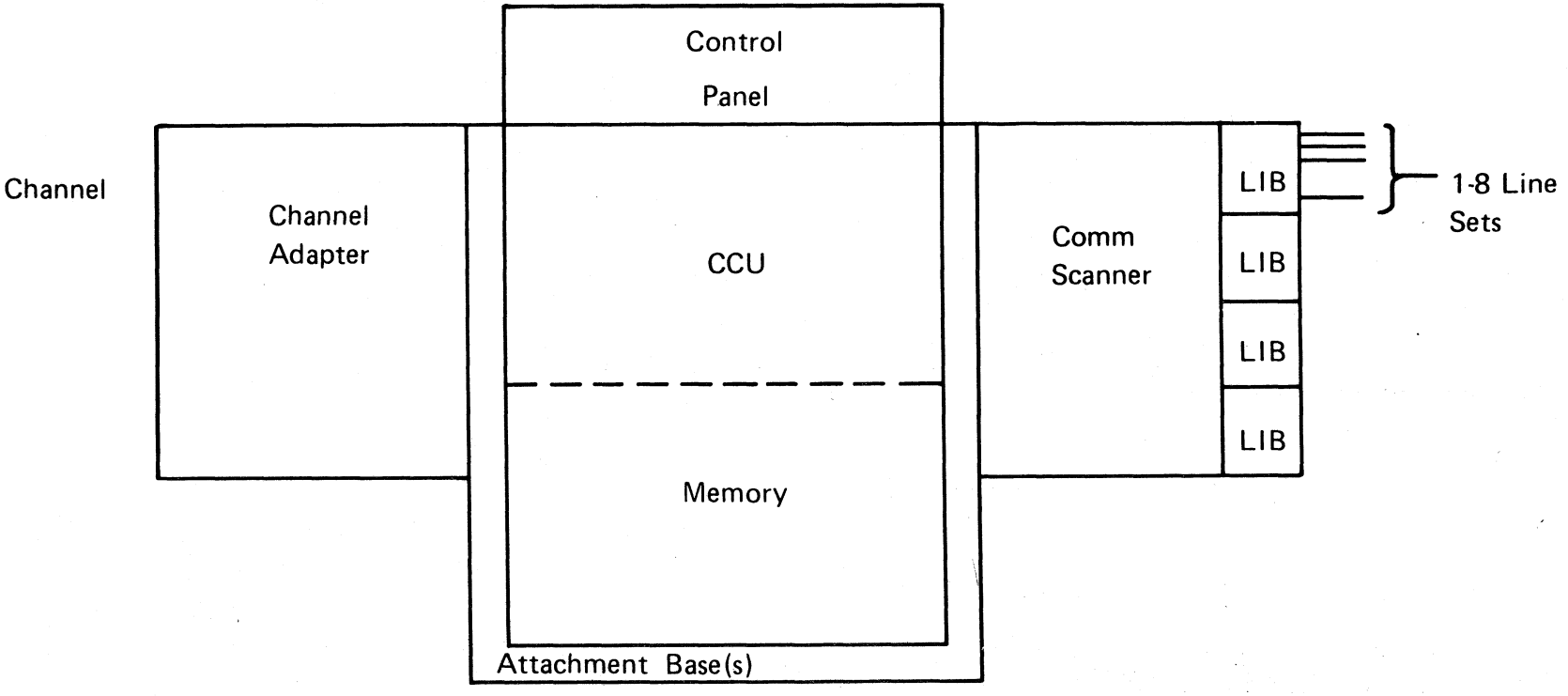
[FE 120496]

* Denotes Invalid Operation

3705 Instruction Decode

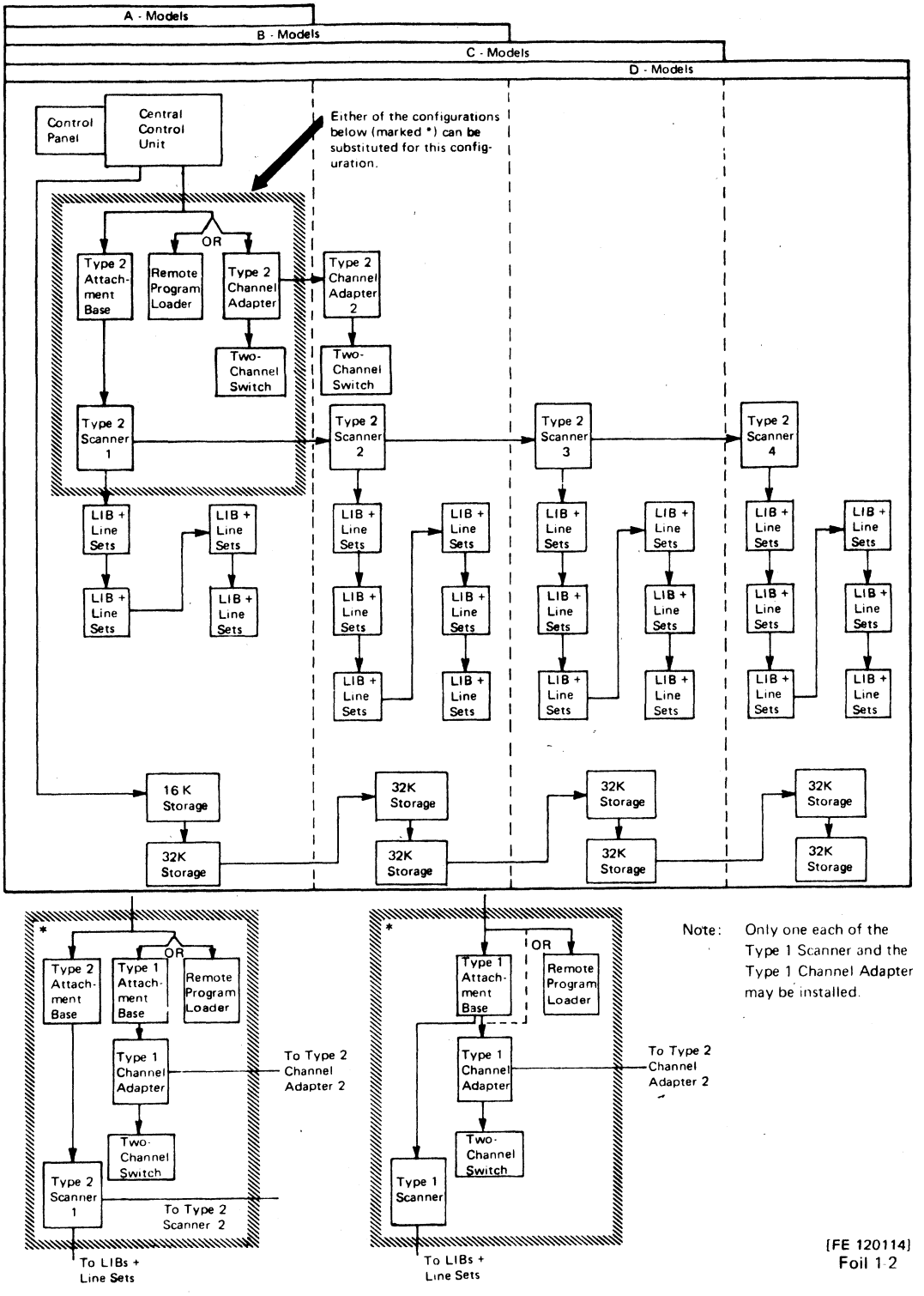
D1	D2	D3	D4

3705 Components



[FE 115069]
Foil 1-1

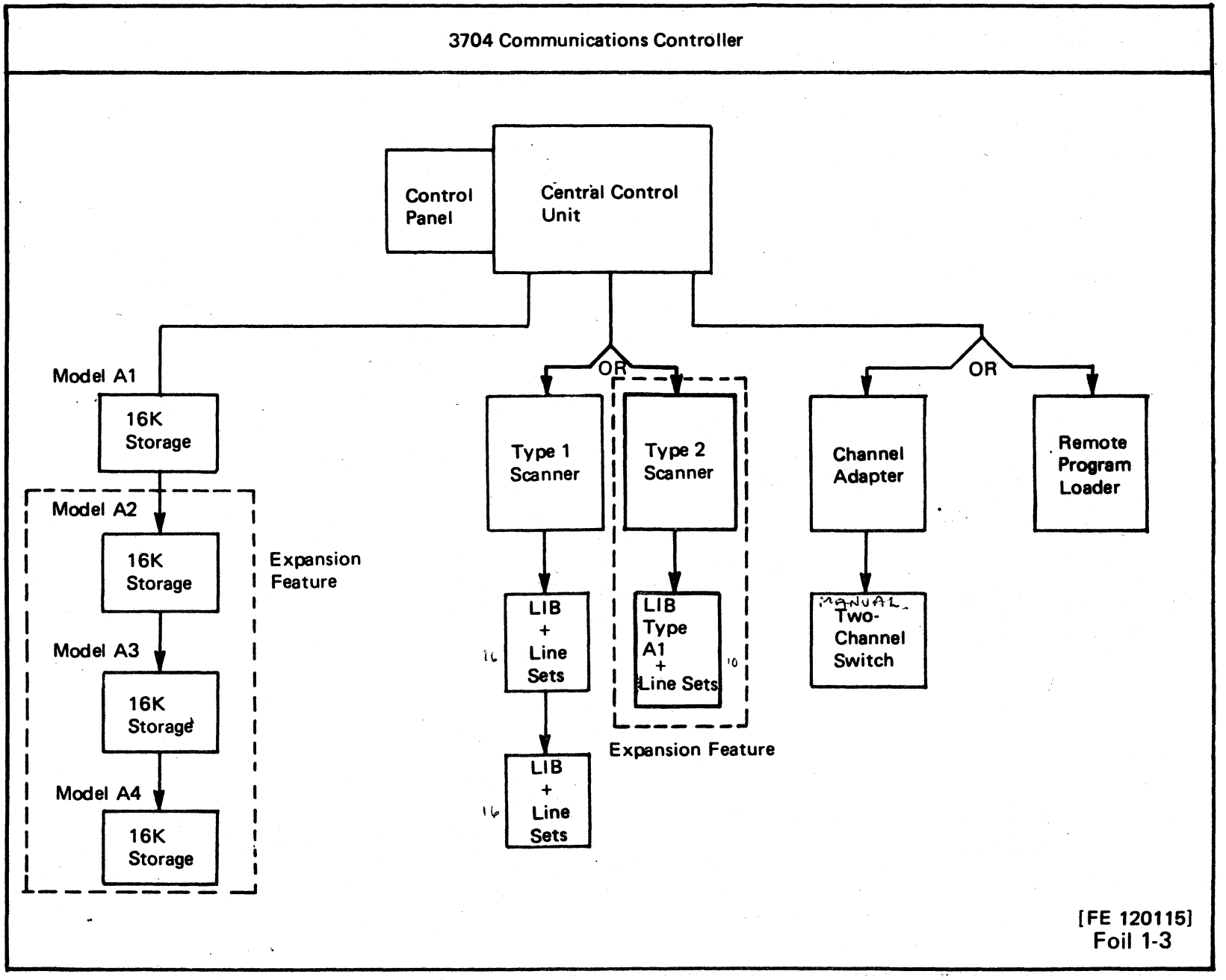
3705 Configuration



Note: Only one each of the Type 1 Scanner and the Type 1 Channel Adapter may be installed.

[FE 120114]
Foil 1-2

3704 Configuration



3704/3705 Program Support

System Support Package

1. System Generation Macros

   a. For EP
   b. For NCP

2. Utilities

   a. Loader - load CP
   b. Dump - 370X

3. 3705 Assembler

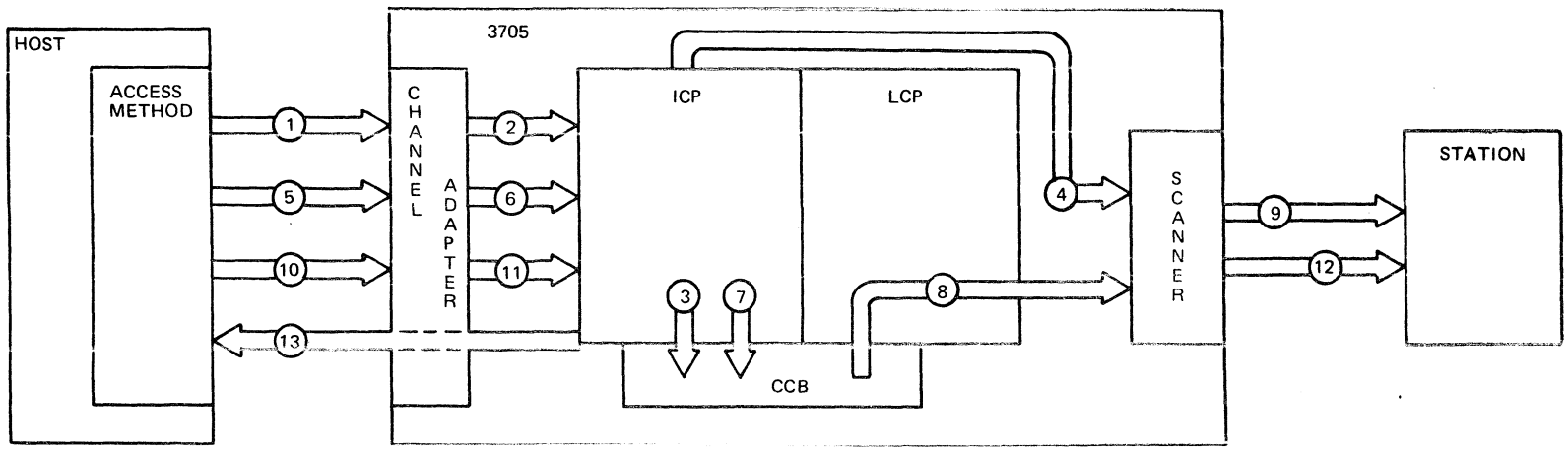
Teleprocessing Control Programs

1. Emulation Program (EP)

2. Network Control Program (NCP)

[FE 115133]
Foil 1-4

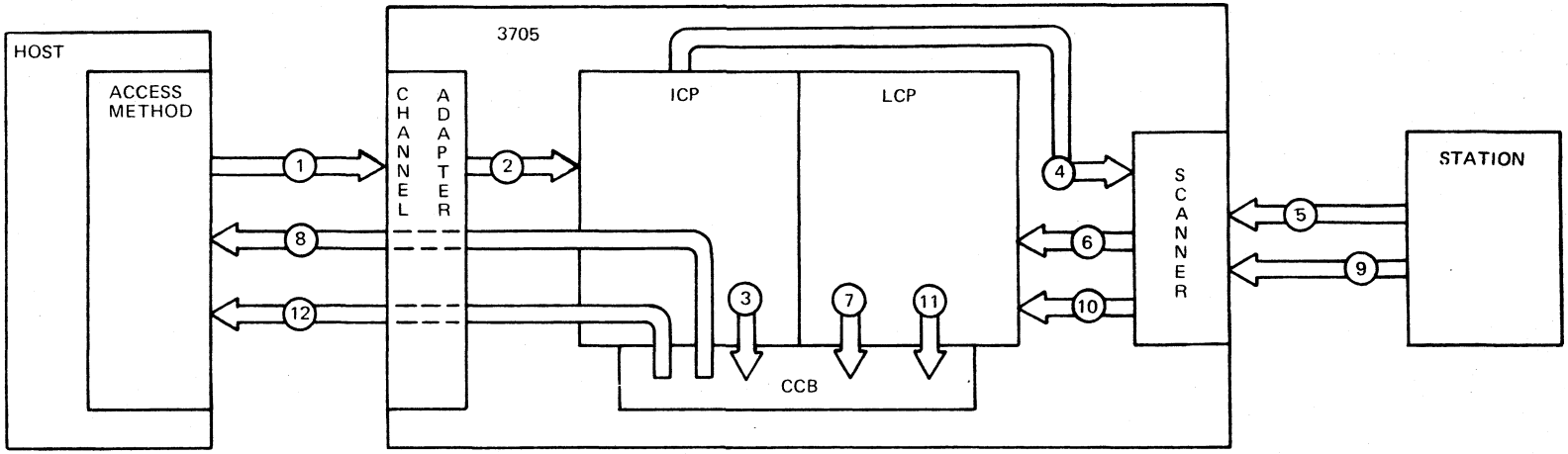
Emulation Program Data Flow (Write)



1. The Host issues a WRITE command.
2. The Channel Adapter interrupts the ICP.
3. The ICP validates the command and prepares the CCB.
4. The ICP prepares the line.
5. The Host sends the data (up to 4 bytes).
6. The Channel Adapter interrupts the ICP.
7. The ICP places the data in the CCB.
8. The LCP removes the data from the CCB and sends it to the Scanner.
9. The Scanner sends the data to the Station via the LIB.
10. The Host completes its data transmission.
11. The Channel Adapter interrupts the ICP.
12. The Scanner completes its data transmission.
13. The ICP sends the ending status to the Host via the Channel Adapter.

[FE 120116]
Foil 1-5

Emulation Program Data Flow (Read)



1. The Host issues a READ command.
2. The Channel Adapter interrupts the ICP.
3. The ICP validates the command and prepares the CCB.
4. The ICP prepares the line.
5. The Station sends the data.
6. The Scanner interrupts the LCP.
7. The LCP places the data in the CCB and interrupts the ICP.
8. The ICP removes the data from the CCB and sends it to the Host via the Channel Adapter.
9. The Station completes its data transmission.
10. The Scanner interrupts the LCP.
11. The LCP stores the ending status in the CCB and interrupts the ICP.
12. The ICP removes the ending status from the CCB and sends it to the Host via the Channel Adapter.

[FE 120117]
Foil 1-6

Pre-GEN

Create and Catalog Prior to Installing PID Tapes

SYS1.MAC3705	135 Tracks
SYS1.OBJ3705	25 Tracks

Provide Space

SYS1.LINKLIB	30 Tracks

Create and Catalog Prior to Stage 2 of SYSGEN

SYS1.EPOBJECT *

SYS1.EPLOAD *

Provide a UCB for the Native Sub-channel (NSC) and Superzap

UCBETI	X'00'	Prior to OS Release 21.6
UCBATI	X'00'	
UCBTYP	X'50004015'	

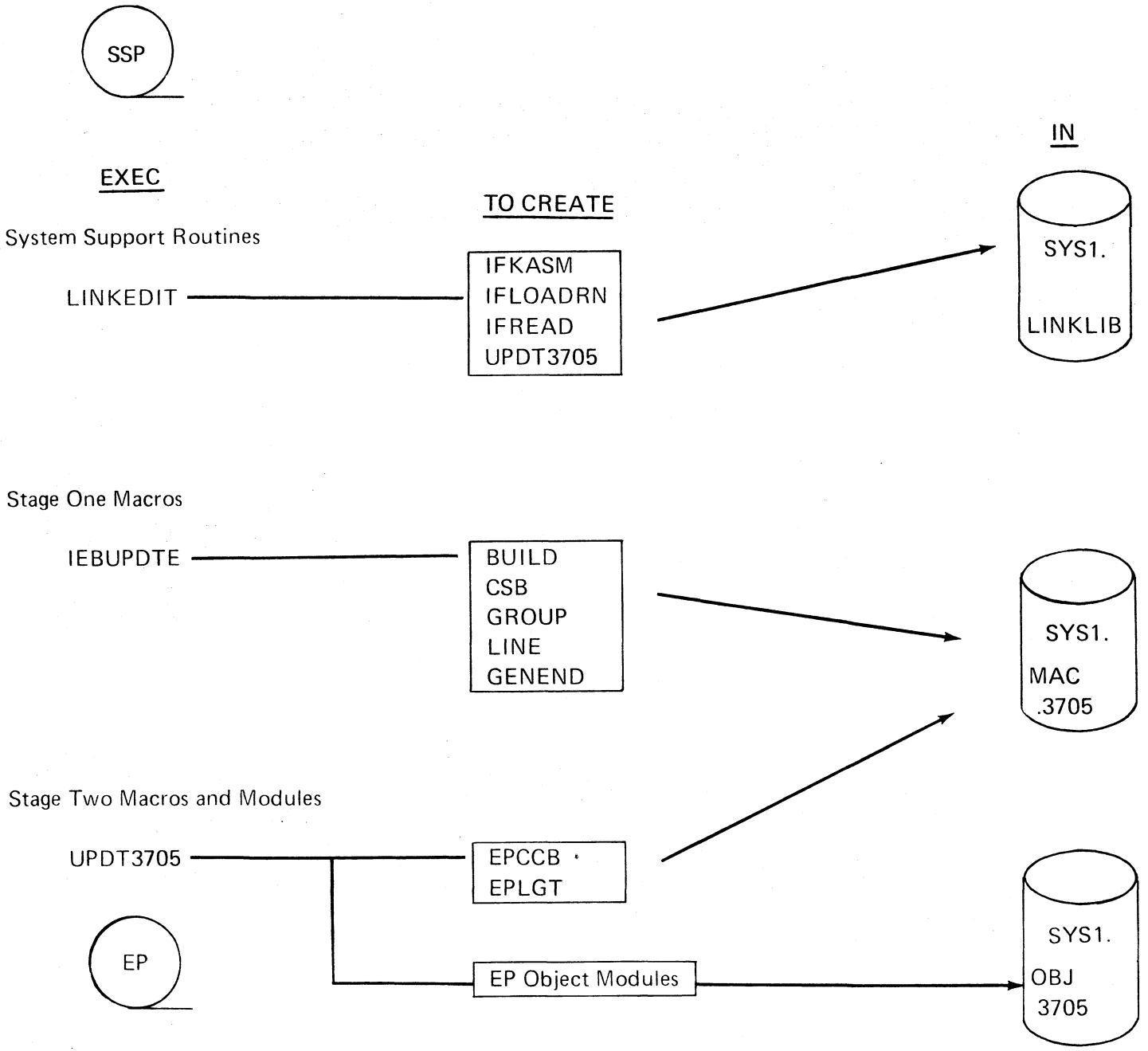
Start Reader to SSP Tape (System Support Package)

```
S RDR,XXX,DCB=(BLKSIZE=3440,BUFL=3440,RECFM=FB),
     REGION=52K
```

* Build QUALIFY=SYS1.OBJLIB=EPOBJECT,LOADLIB=EPLOAD

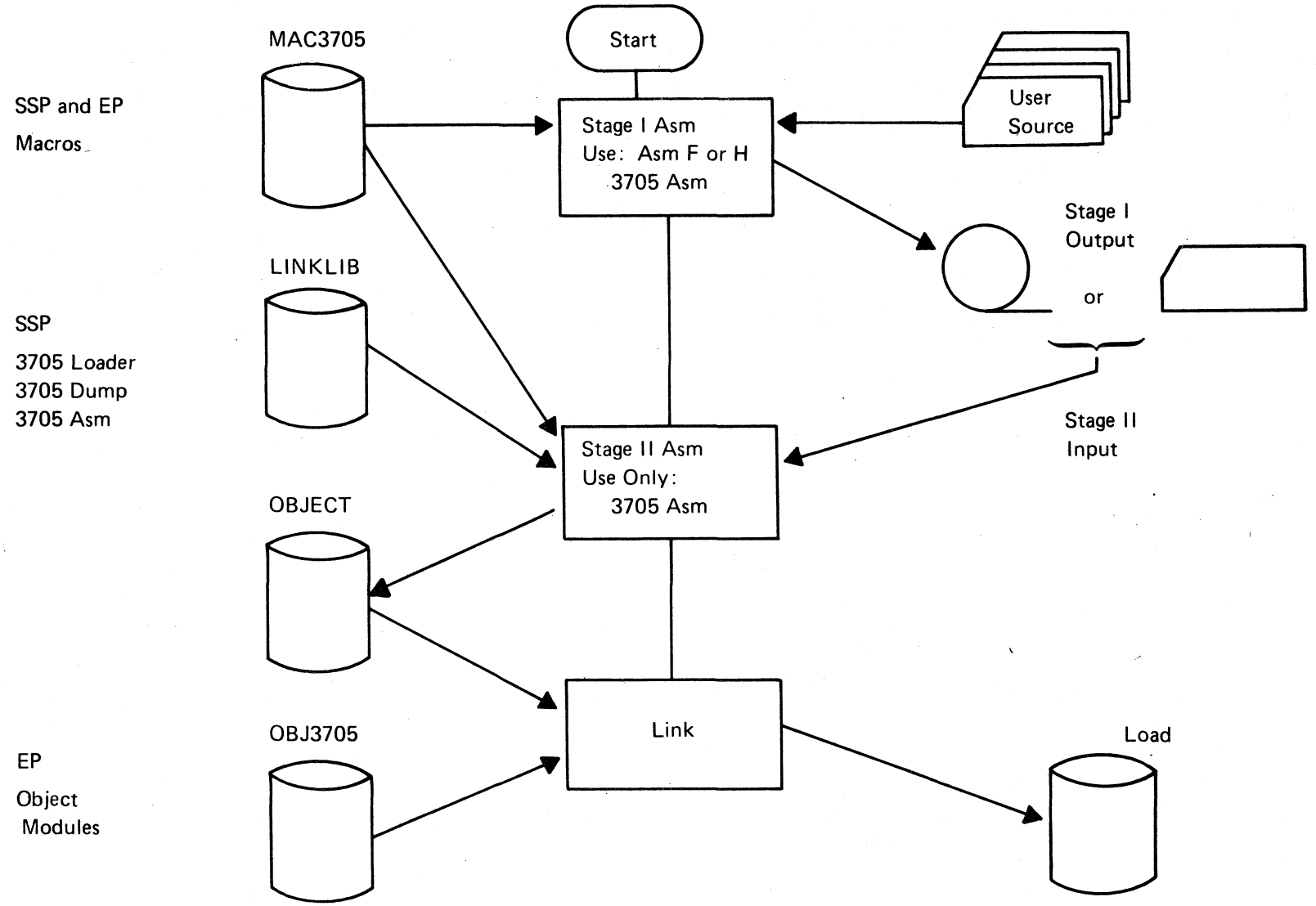
[FE 115081]
Foil 2-1a

Job Stream From SSP Tape



[FE 115082]
Foil 2-1b

EP Generation



[FE 115083]

Foil 2-1c

STAGE ONE INPUT JOB STREAM (OS)

```
//STAGE1    JOB MSGLEVEL=1
//STEP1     EXEC PGM=progname, PARM='DECK'      (1)
            (JCL DD's for ASSEMBLER)
//SYSLIB    DD DSN=SYS1.MAC3705,DISP=SHR        (2)
//SYSIN     DD   *

            3705 MACRO'S FOR EP GENERATION

/*
```

NOTE 1: PROGNAME MAY BE OS ASSEMBLER OR 3705 ASSEMBLER (PGM=IFKASM)

NOTE 2: SPECIFY 3705 MACRO LIBRARY.

[FE 115084]
Foil 2-2

STAGE ONE INPUT STREAM (DOS)

```
//     JOB EPGEN1
//     EXEC IFTASM                                          (1)
       (EP GENERATION MACRO INSTRUCTION STATEMENTS)
/*
/&
```

NOTE 1: 3705 assembler program name

[FE 115085]
Foil 2-2a

EMULATION GENERATION MACROS

BUILD
- 1ST GENERATION MACRO
- DEFINES THE COMMUNICATIONS CONTROLLER

CSB
- ONE PER COMMUNICATIONS SCANNER
- MUST BE CODED IMMEDIATELY FOLLOWING BUILD MACRO

GROUP
- ONE PER LINE OR GROUP OF LINES BASED ON LINE AND/OR TERMINAL TYPE

LINE
- ONE PER LINE
- MUST BE CODED FOLLOWING THE GROUP MACRO FOR THIS LINE

GENEND
- LAST MACRO OF A GENERATION

[FE 115086]
Foil 2-3

Build Macro

Name	Operation	Operands
[symbol]	BUILD	HICHAN=subchanaddr, LOCHAN=subchanaddr [,JOBCARD= { YES / NO }]* [,LESIZE=n]* [,LINETRC= { YES / NO } [,LOADLIB=dsname]* [,MODEL= { 3704 / 3705 }] [,NEWNAME= { EP001 / symbol }]* [,OBJLIB=dsname]* [,QUALIFY= { symbol / NONE / SYS1 }]* [,TEST= { YES / NO }] [,TYPSYS= { OS / DOS }] [,UNIT=unittype]* [,UT1=dsname]* [,UT2=dsname]* [,UT3=dsname]*

* Use for OS only

[FE 120118]
Foil 2-4

CSB Macro

Name	Operation	Operands
[symbol]	CSB	SPEED=(rate,...), WRAPLN=lineaddr [,MOD={n / 0}] [,TYPE={TYPE1 / TYPE2}]

Rate	*Represents*
45	45.5 bps
50	50.0
56	56.89
74	74.2
75	75.0
100	100.0
110	110.0
134	134.5
150	150.0
200	200.0
300	300.0
600	600.0
950	950.0
1200	1200.0
2000	2000.0
2400	2400.0

n	*Module*	*Line Interface Addresses (hex) Communication Scanner*	
		Type 1	*Type 2*
0	base — 3704	000-01F	020,022, 024-02B
0	base — 3705	000-03F	020-05F
1	expansion 1	—	0A0-0FF
2	expansion 2	—	120-17F
3	expansion 3	—	1A0-1FF

[FE 120127]
Foil 2-5

Group Macro

Name	Operation	Operands
[symbol]	GROUP	[,CHAREC= ({ XONOFF[,chars] / [XON / XOFF / NO] ,chars })]
		[,DIAL= { NO / YES }]
		[,EOB=(character[,F])]
		[,EOT=(character[,F])]
		[,LNCTL= { SS / BSC }]
		[,REPLYTO= { count / 3.0 }]
		[,TEXTTO= { count / 25.6 }]

[FE 120119]
Foil 2-6

Line Macro

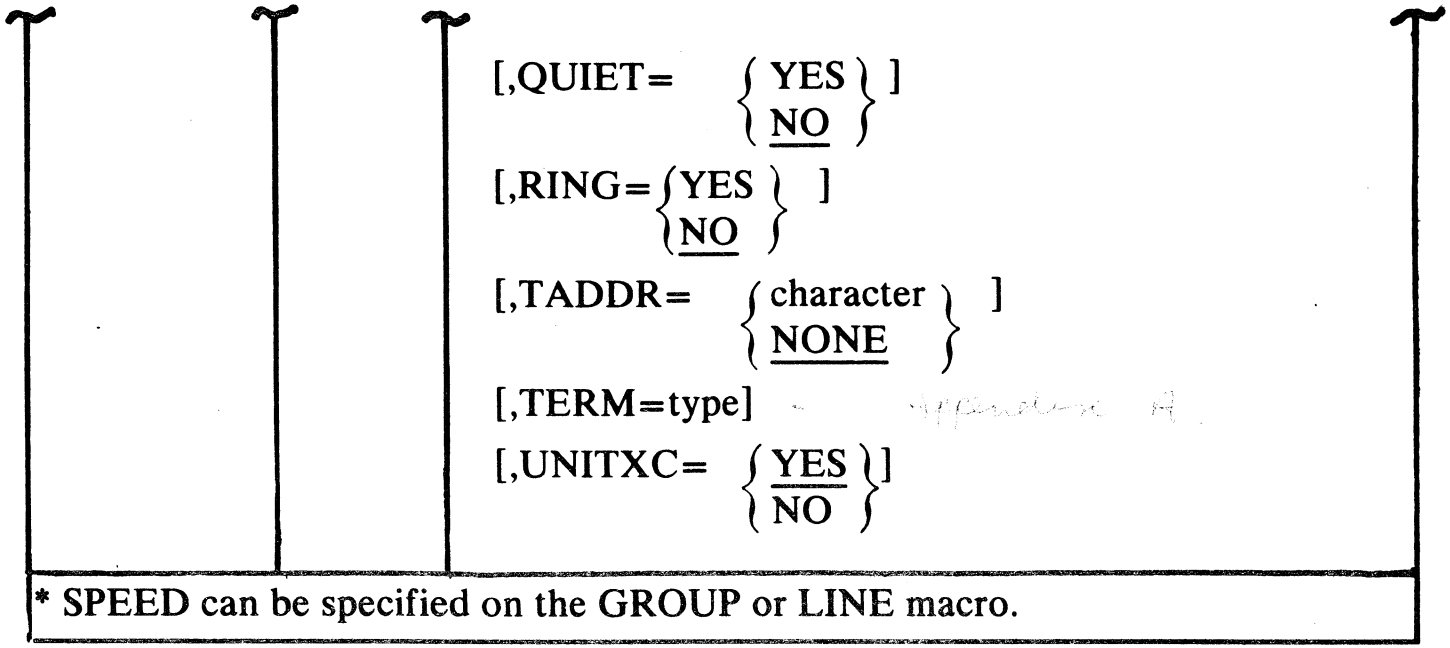
Name	Operation	Operands
[symbol]	LINE	ADDRESS=(lineaddr,subchanaddr), SPEED=rate* [,AUTO= {lineaddr / NONE}] [,CHECK= {DCD / NODCD}] [,CHNPRI= {NORMAL / HIGH}] [,CLOCKNG={EXT / INT}] [,CODE={EBCDIC / USASCII}] [,CU= {2701 / 2702 / 2703}] [,CUTYPE= {2972 / 3271 / 3275 / 2845 / 2848}] [,DATRATE={HIGH / LOW}] [,DISABLE= {YES / NO}] [,DUALCOM={(lineaddr, {A / B}) / NONE}] [,DUPLEX= HALF / FULL] [,FEATURE=[({DUALCODE / NODUALCD} {[,IMEND] / NOIMEND} {[,LRC] / NOLRC} {[,SPACE] / NOSPACE})] [,INTPRI= {0 / 1 / 2 / 3}] [,MODEM= {OPTION 1 / OPTION 2}] [,MULTI= {YES / NO}]

[FE 120125]
Foil 2-7

[NEWSYNC = {YES / NO}]

[PAD = {YES / NO}]

Line Macro



[FE 120126]
Foil 2-7a

Group vs Line Operands

Operand:	*GROUP MACRO*	*LINE MACRO*	*START-STOP*	*BINARY SYNCHRONOUS*
ADDRESS		•	•	•
AUTO		•	•	•
CHECK	•	•	•	
CHNPRI	•	•		•
CHAREC	•		•	
CLOCKNG	•	•	•	•
CODE	•	•		•
CU	•	•	•	•
CUTYPE	•	•	•	•
DATRATE	•	•	•	•
DIAL	•		•	•
DISABLE	•	•		•
DUALCOM		•		•
DUPLEX	•	•	•	•
EOB	•		•	
EOT	•		•	
FEATURE*	•	•		
INTPRI	•	•	•	•
LNCTL	•		•	•
MODEM	•	•	•	•
MULTI	•	•	•	
QUIET	•	•	•	
RING	•	•	•	•
REPLYTO	•		•	
SPEED	•	•	•	•
TADDR	•	•		•
TERM	•	•	•	•
TEXTTO	•		•	
UNITXC	•	•	•	

*The FEATURE operand has both S-S and BSC suboperands.

[FE 120120]
Foil 2-8

GENEND Macro

Name	Operation	Operand
[symbol]	GENEND	[SCANCTL=(value1,value2,value3,value4,value5)]

[FE 120121]
Foil 2-9

Scan Ctl

LIB 1		LIB 2		LIB 3	
020	021	030	031	040	041
022	023	032	033	042	043
024	025	034	035	044	045
026	027	036	037	046	047
028	029	038	039	048	049
02A	02B	03A	03B	04A	04B
02C	02D	03C	03D	04C	04D
02E	02F	03E	03F	04E	04F

LIB 4	
050	051
052	053
054	055
056	057
058	059
05A	05B
05C	05D
05E	05F

[FE 115100]
Foil 2-9a

CONTROL STATEMENT - OS

```
LOAD    LOADMOD= member name,
        3705=ddname
        [,DIAG= {Y6/Y8/NO}]
```

LOADMOD= member name

- EP LOAD MODULE MEMBER NAME

3705=ddname

-DDNAME TO 3705 DD STATEMENT

[,DIAG= {Y6/Y8/NO}]

-INITIAL TEST RTN (ITPROG) IS EXECUTED OR NOT

Y6: 16-BIT 3705

Y8: 18-BIT 3705

NO: DO NOT EXECUTE THE RTN

CONTROL STATEMENT - DOS

```
LOAD  LOADMOD=filename,
      3705=SYSxxx,
      [,DIAG= Y6/Y8/NO ]
      [,DEVICE= 2311/2341/3330/3340 ]
```

LOADMOD= filename

- FILE NAME OF THE FILE THAT CONTAINS THE EP LOAD MODULE

3705= SYSxxx

- 3705 SYMBOLIC ADDRESS

[,DIAG= { Y6/Y8/NO }]

- INITIAL TEST RTN IS EXECUTED OR NOT

  Y6: 16-BIT 3705

  Y8: 18-BIT 3705

  NO: DO NOT EXECUTE THE RTN

[,DEVICE= 2311/2314/3330/3340]

- DASD TYPE ON WHICH THE EP LOAD MOD, RESIDES

[FE 115102]
Foil 2-11

JCL - OS LOADER

```
//jobname     JOB     (initiates the job)
//stepname    EXEC    (program name IF LOADRN or the name
                      catalogued procedure)
//SYSUT1      DD      (DASD input data set that contains the
                      EP Load Modules)
//SYSPRINT    DD      (message data set)
//SYSUT3      DD      (DASD input data set that contains the 3705
                      initial test routine ; not required
                      if DIAG=NO is specified in LOAD statement)
//DDNAME      DD      (unit address of the 3705 one for each 3705)
//SYSIN       DD      (input data set that contains load statement)
      (CTL $TMT(S))
/*
```

JOB CONTROL CARD - DOS LOADER

```
// JOB          (initiates the job)
// ASSGN     SYSxxx,X'xxx' (3705 unit address)
// DLBL
// EXTENT                              (EP load module resides on)
// ASSGN     SYS006,X'xxx'
// EXTENT                              (initial test rtn resides on)
// ASSGN     SYSxxx,X'xxx'
// EXEC      IFULOAD     (LOADER prog.)
        (LOAD CTL STATEMENT)
/*
/&
```

[FE 115104]
Foil 2-13

DUMP CONTROL STATEMENT
- DOS AND OS -

```
DUMP    [FROMADDR=addr]
        [,TOADDR=addr]
        [,MNEMONIC={Y/N }]
```

[FROMADDR=addr]

- LOWER ADDRESS OF THE 3705 STORAGE
  (HEX NOTATION W/O ' ')
  DEFAULT: LOWER LIMIT OF THE 3705

[TOADDR=addr]

- UPPER ADDRESS OF THE 3705 STORAGE
  (HEX NOTATION W/O ' ')
  DEFAULT: UPPER LIMIT OF THE 3705

[MNEMONIC= {Y/N}]

- REQUEST FOR MNEMONIC OPERATION CODE

[FE 115106]
Foil 2-14

JCL - OS DUMP

```
//jobname     JOB     (initiates the job)
//stepname    EXEC    PGM=IFLREAD
//SYSUT1      DD      (3705 DD)
//SYSUT2      DD      (DASD  work data set)
//SYSPRINT    DD      (data set for dump list)
//SYSIN       DD      (DUMP  ctl stmt input stream)
                      (DUMP CTL STMT)
/*
```

JOB CONTROL CARD - DOS DUMP

```
// JOB          (initiates the job)
// ASSGN        SYS007,X'xxx' (3705 unit address)
// EXEC         IFUDUMP
          (DUMP CONTROL STATEMENT)
/*
/&
```

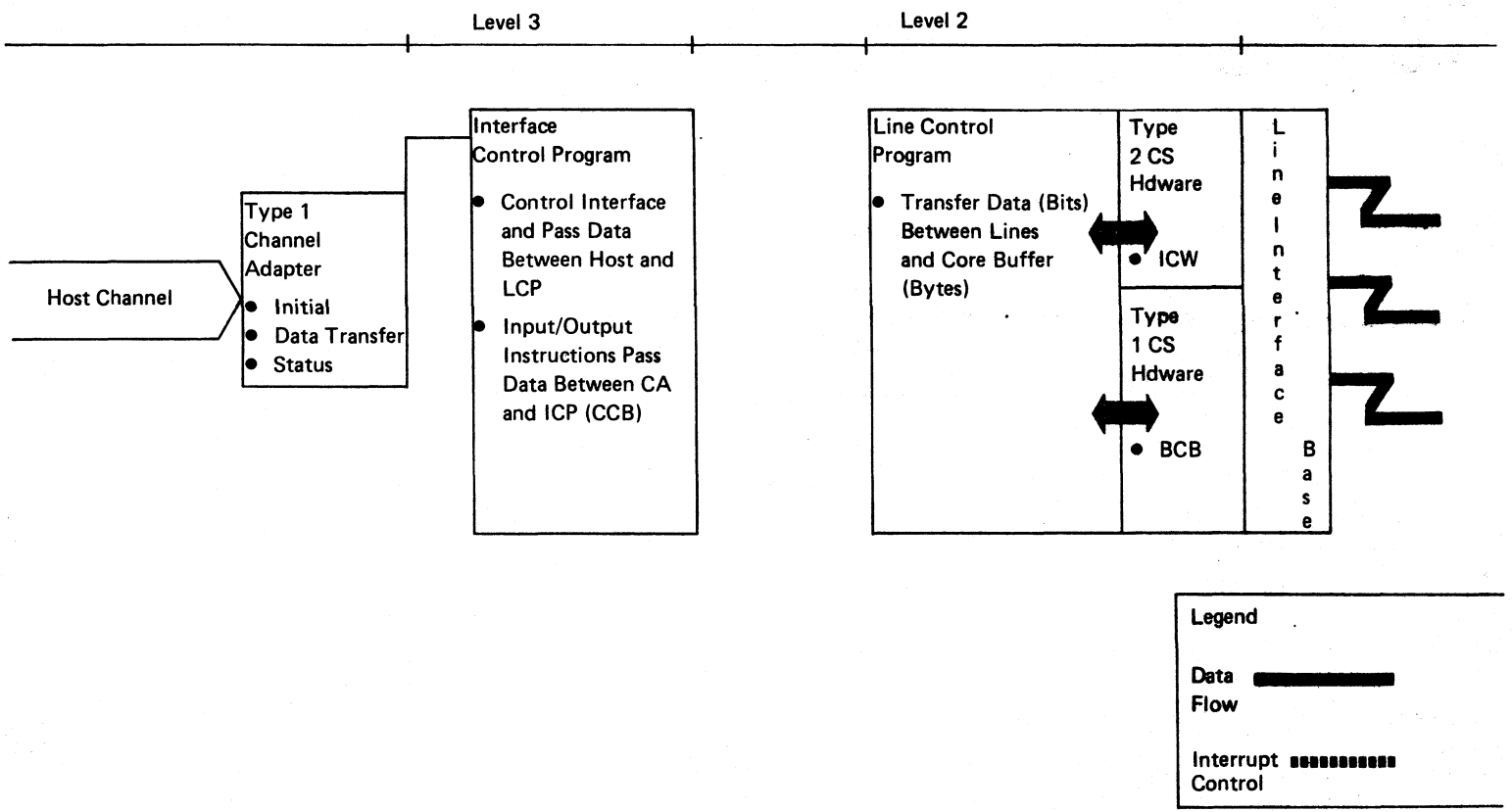
[FE 115107]
Foil 2-16

Dynamic Dump Functions

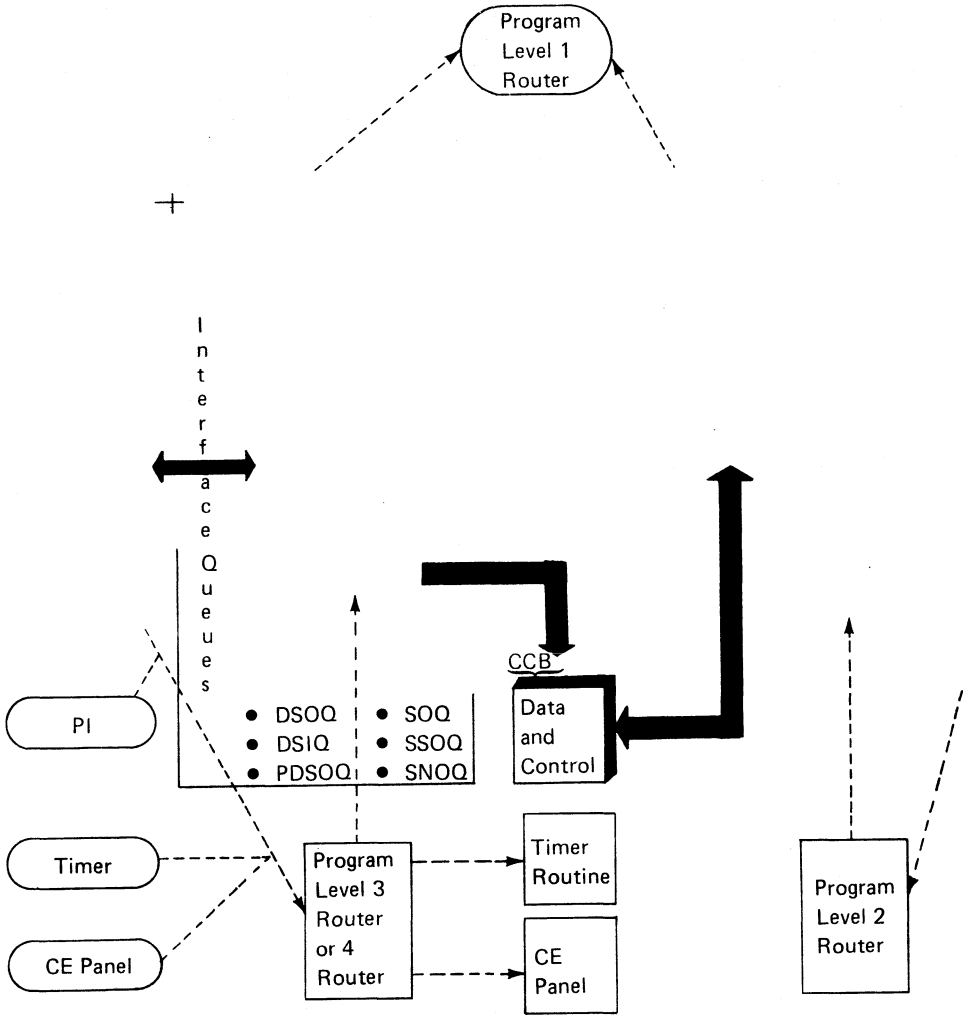
1. DS - Dump Full Storage
2. DT - Dump Trace Table
3. DD - Dynamic Trace
4. OPT - Enter Trace Option
5. PRT - Tape Edit Print
6. CAN - Program End
7. DXXXX - Display Storage to Console
8. Help - Display above

[FE 120122]
Foil 2-17

Emulator Overview

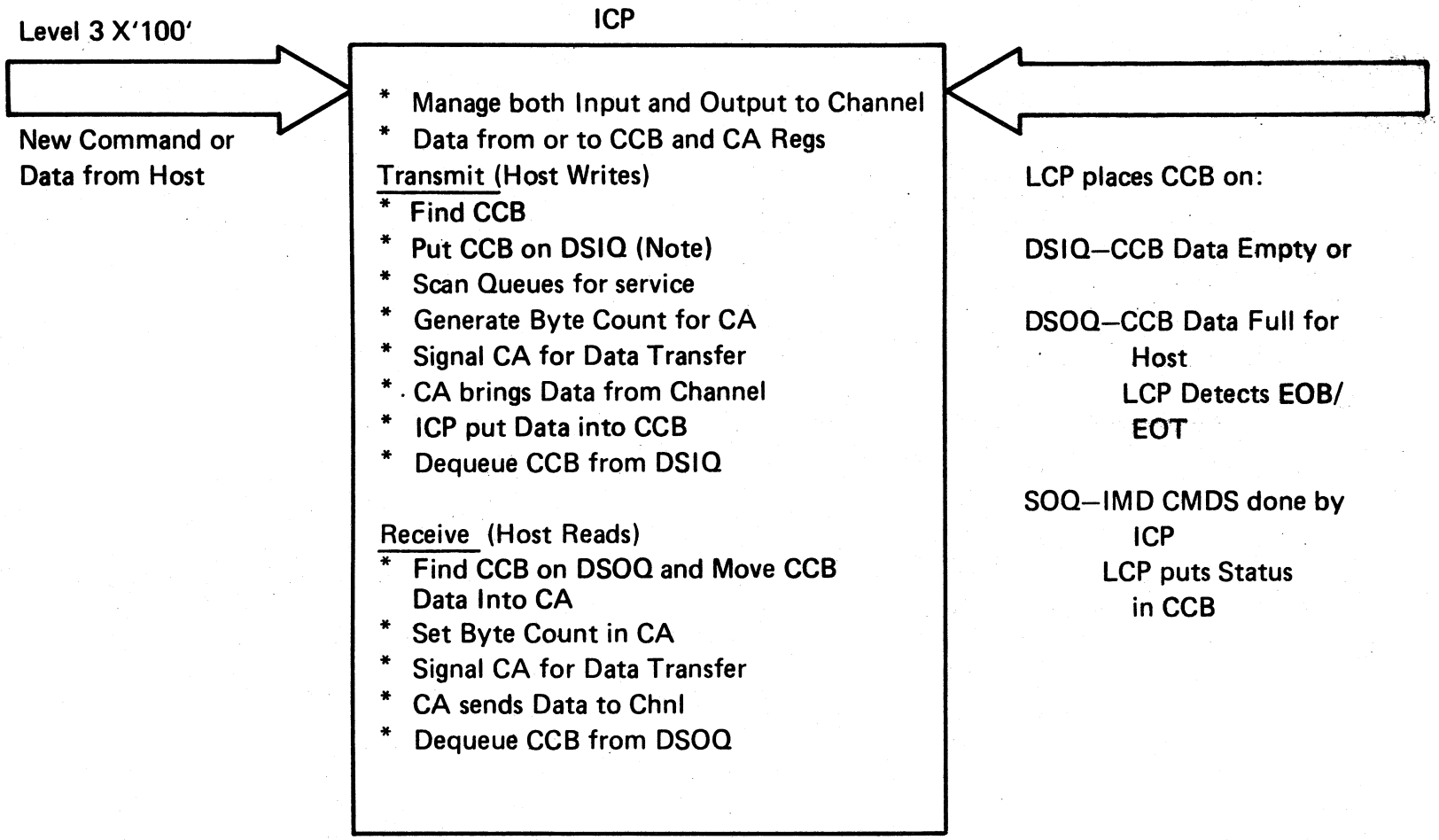


[FE 115108]
Foil 3-1a



[FE 115109]
Foil 3-1b

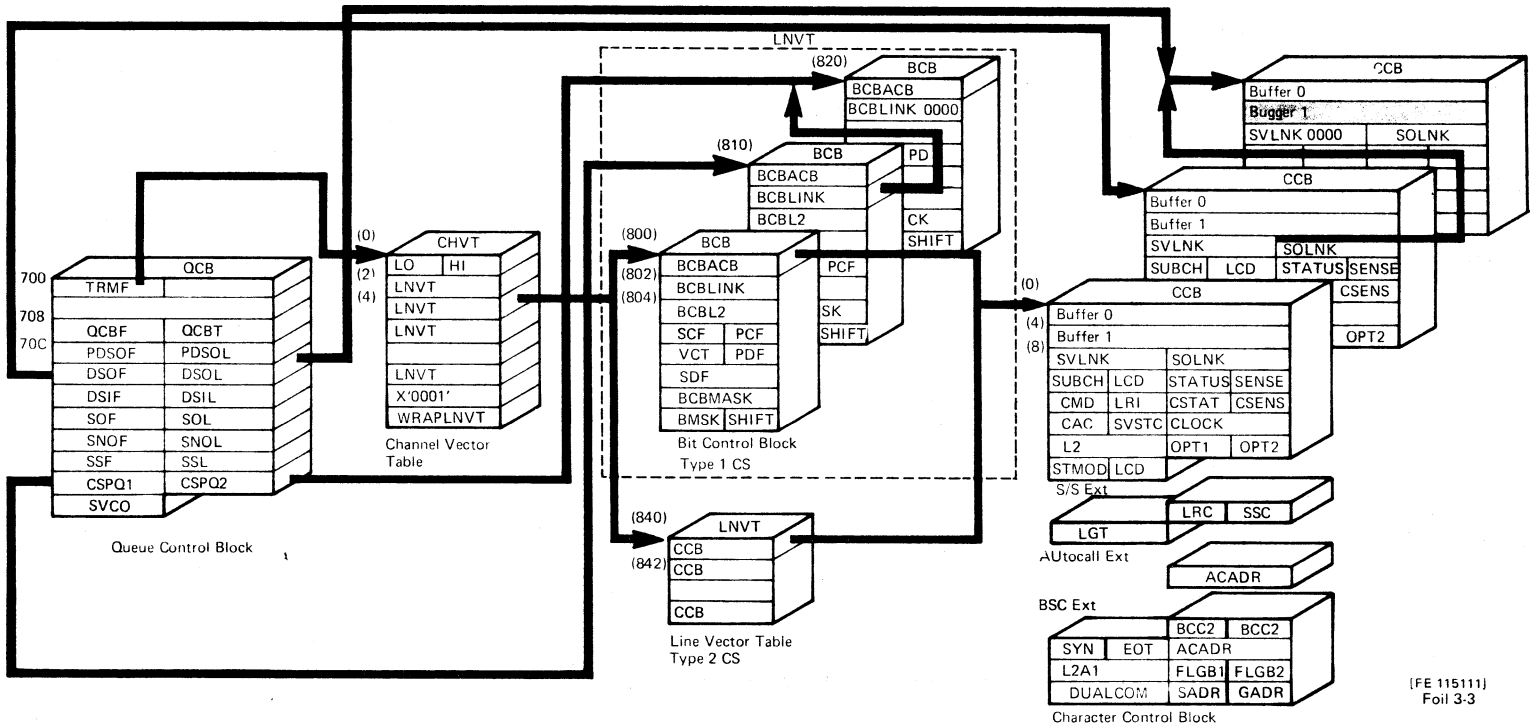
Interface Control Program



Note: For SS This is Done Running in Level 2

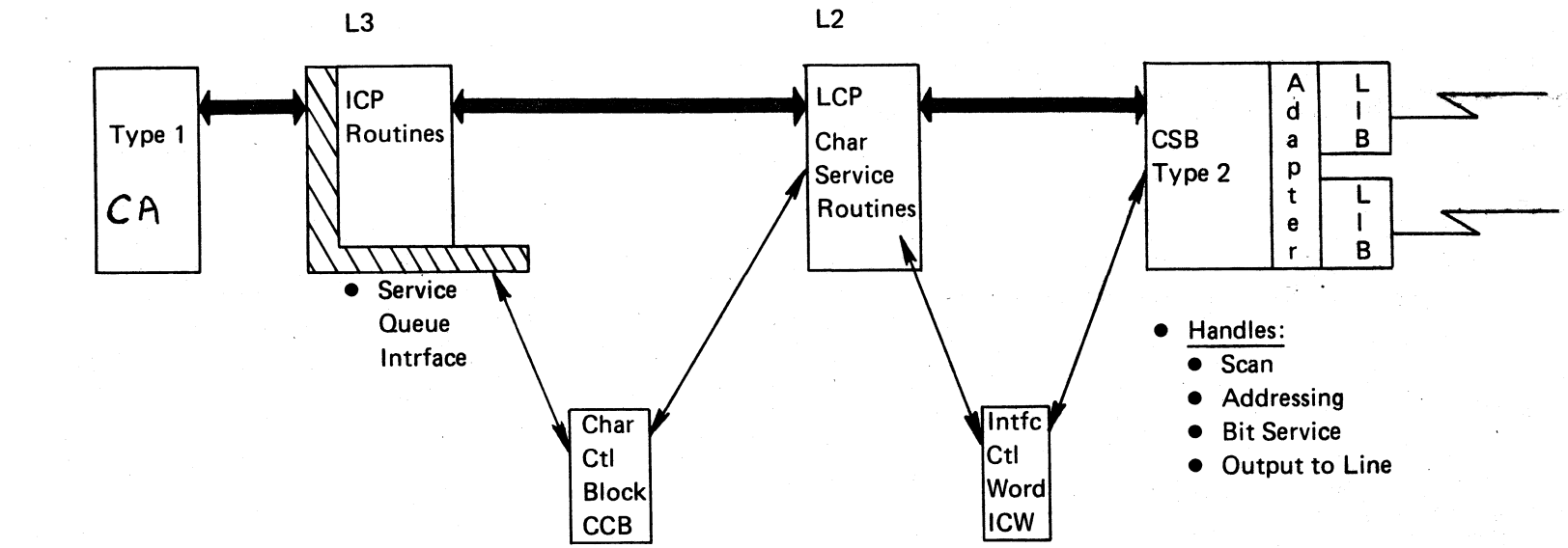
[FE 115110]
Foil 3-2

Emulator Control Blocks



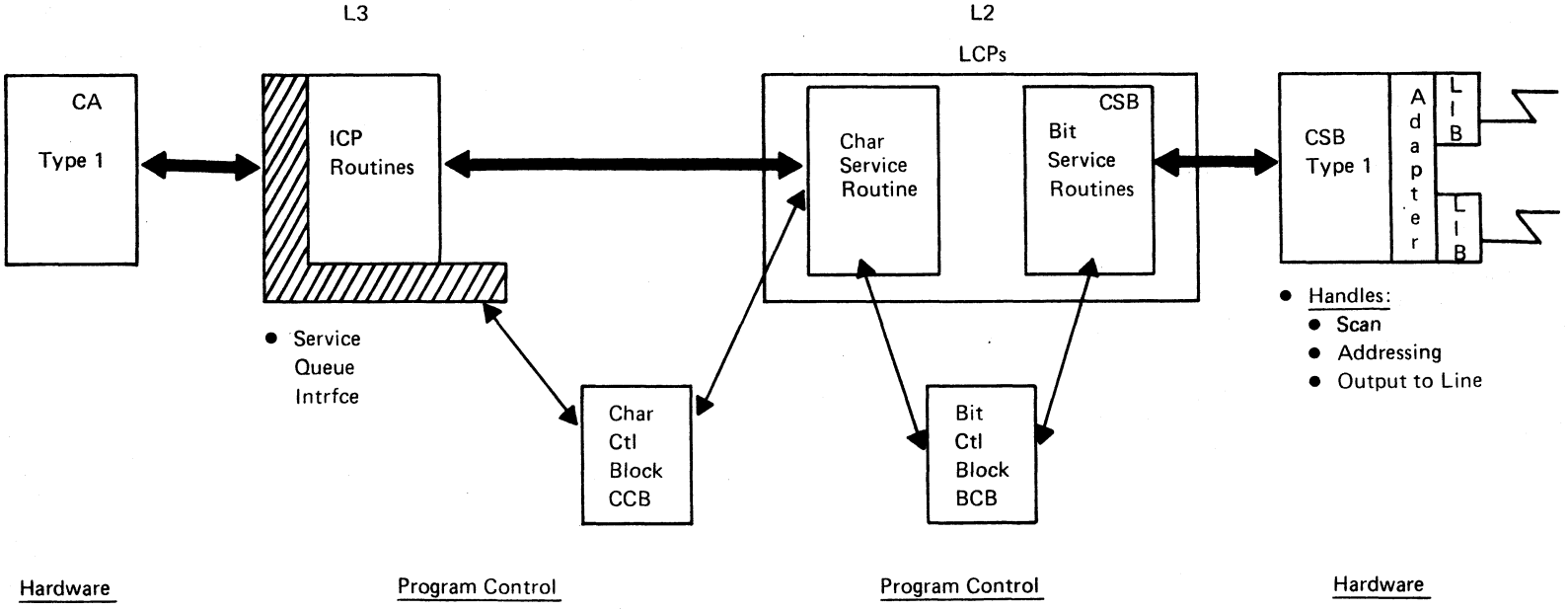
(FE 115111)
Foil 3-3

Emulator Program Overview
Type 2CS



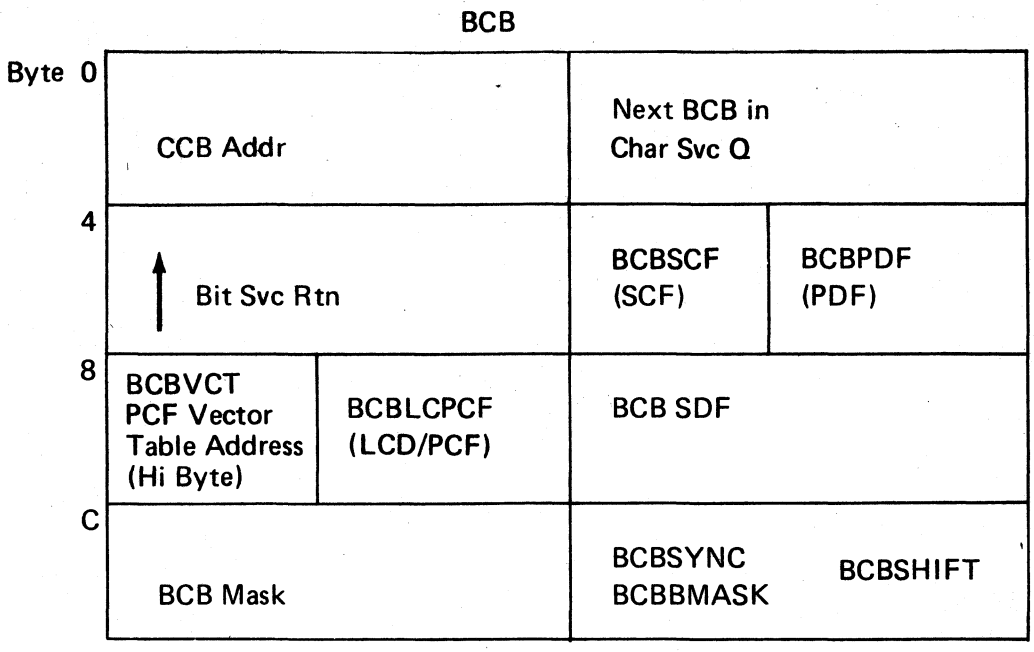
[FE 115112]
Foil 3-4

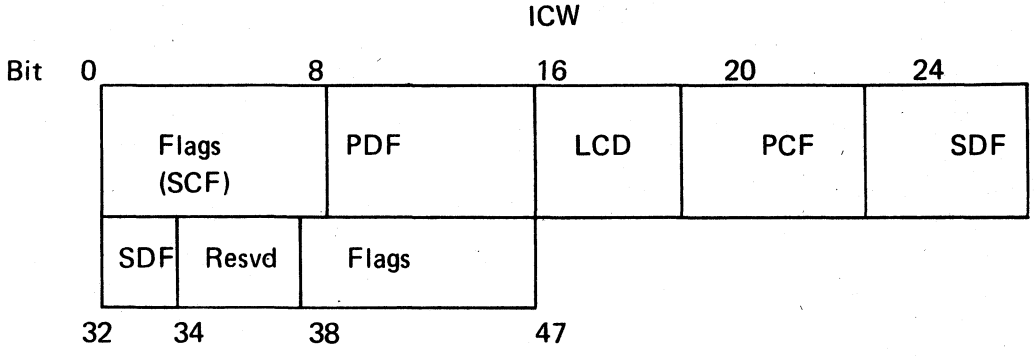
Emulator Program Overview
Type 1 CS



[FE 115113]
Foil 3-5

BCB - ICW





[FE 115114]
Foil 3-6

Trace Formats

```
I   I     DSI I     B         B          FFS F F   C L C S   T T L     L F C
C   C     AEN C     U         U            U S S   M R A V   M M 2     R L C
W   W     TTT W     F         F            B T E   D I C S   C D       CDG B
1   2     A F 3     F         F            C A N   C       T   L I P   /PB A
                    E         E            H T S   0       C   0 S T   S 1 0
                    R         R            A U E   D           C P R   S / D
                    C         1            N S     E           K       C 2 R
```

L2 LINE TRACE FORMAT

```
I   ISC   AAAAAAAA Q A P D   D S S S     I S F F   C L C S   T T L     L F C
N   NUD            F C D S   S 0 N S     N U S S   M R A V   M M 2     R L C
6   6BM            L M S 0   I   0 0     7 B T E   D I C S   C D       CDG B
C   1CM            A D 0                7 C A N   C       T   L I P   /RB A
     HA            G C -Q-U-E-U-E-S-        H T S   0       C   0 S T   S 1 0
     AN            S N                  L A U E   D           C P R   S / D
     ND              T                  0 N S     E           K       C 2 R
```

L3 CHANNEL INITIAL SELECT TRACE FORMAT

```
I   ISX   IDD IDD  Q A P D   D S S S     I S F F   C L C S   T T L     L F C
N   NUX   NAA NAA  F C D S   S 0 N S     N U S S   M R A V   M M 2     R L C
6   6BX   6TT 6TT  L M S 0   I   0 0     7 B T E   D I C S   C D       CDG B
2   3CX   4AA 5AA  A D 0                7 C A N   C       T   L I P   /RB A
     H     12  34  G C -Q-U-E-U-E-S-        H T S   0       C   0 S T   S 1 0
     A             S N                  L A U E   D           C P R   S / D
     N               T                  0 N S     E           K       C 2 R
```

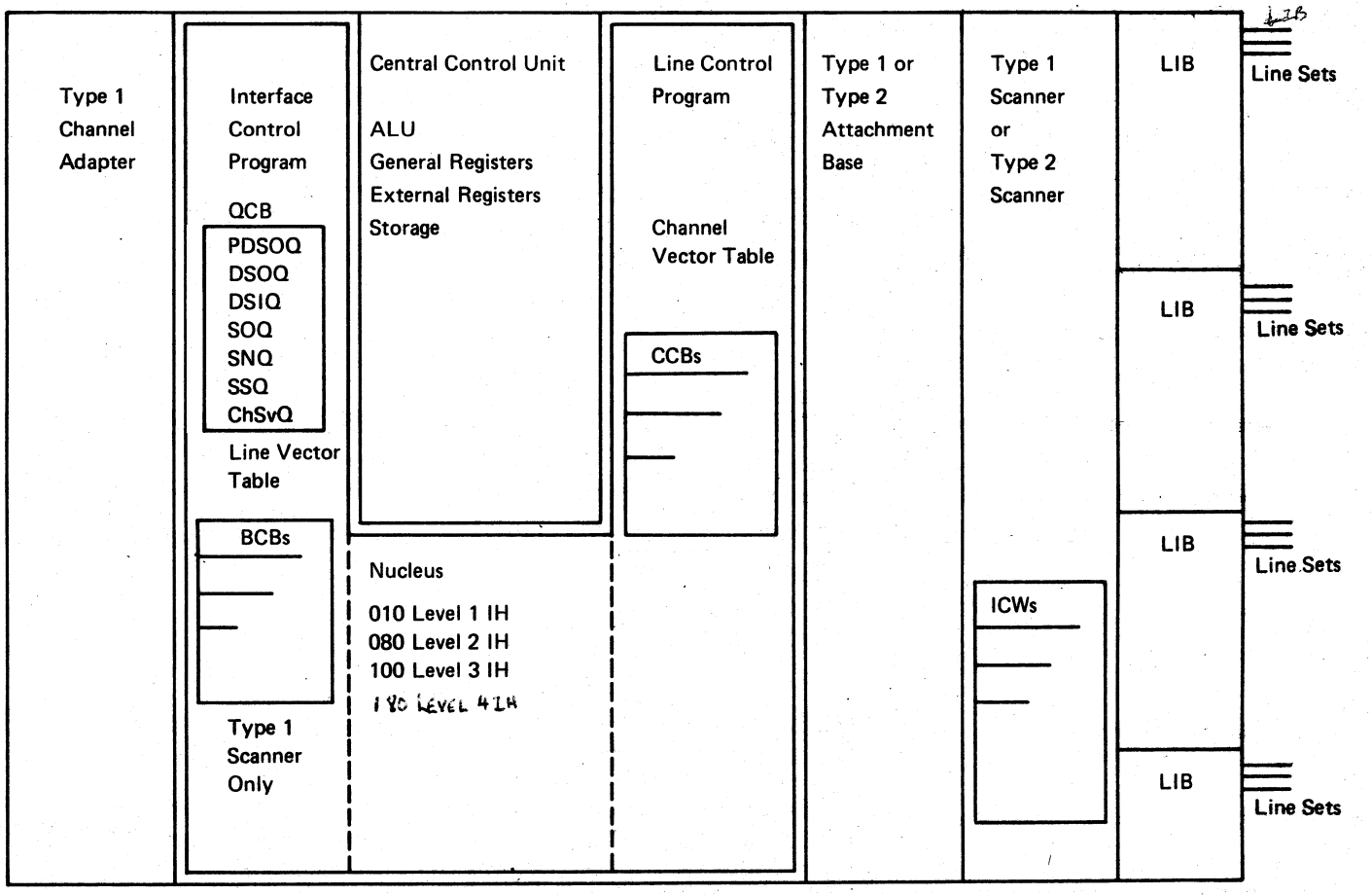
L3 CHANNEL DATA SERVICE TRACE FORMAT

```
I   ISS   FFFFFFFF Q A P D   D S S S     I S F F   C L C S   T T L     L F C
N   NUT            F C D S   S 0 N S     N U S S   M R A V   M M 2     R L C
6   6BA            L M S 0   I   0 0     7 B T E   D I C S   C D       CDG B
2   3CT            A D 0                7 C A N   C       T   L I P   /RB A
     HU            G C -Q-U-E-U-E-S-        H T S   0       C   0 S T   S 1 0
     AS            S N                  L A U E   D           C P R   S / D
     N               T                  0 N S     E           K       C 2 R
```

L3 CHANNEL STATUS SERVICE TRACE FORMAT

[FE 115134]
Foil 3-7

Emulator Program Overview



[FE 115115]
Foil 3-8

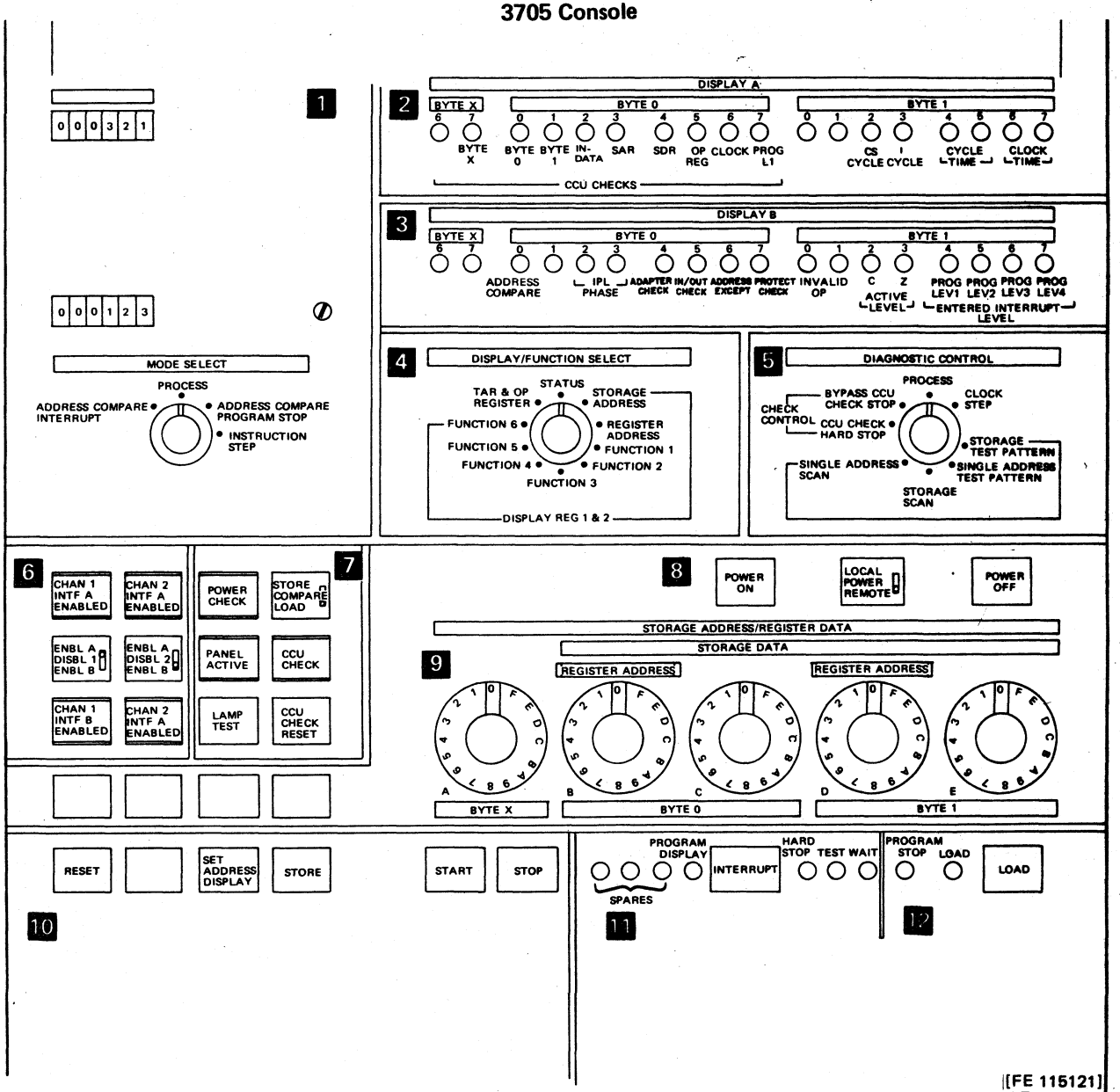
IPL

Phase 1	–	Load Indicator on
	–	General Reset
Phase 2	–	ROS Bootstrap Loaded
	–	IPL LI Request Set
Phase 3	–	Execute Bootstrap at X'0010'
	–	Write IPL Setup

Load the Utility Program Starting at X'0400'

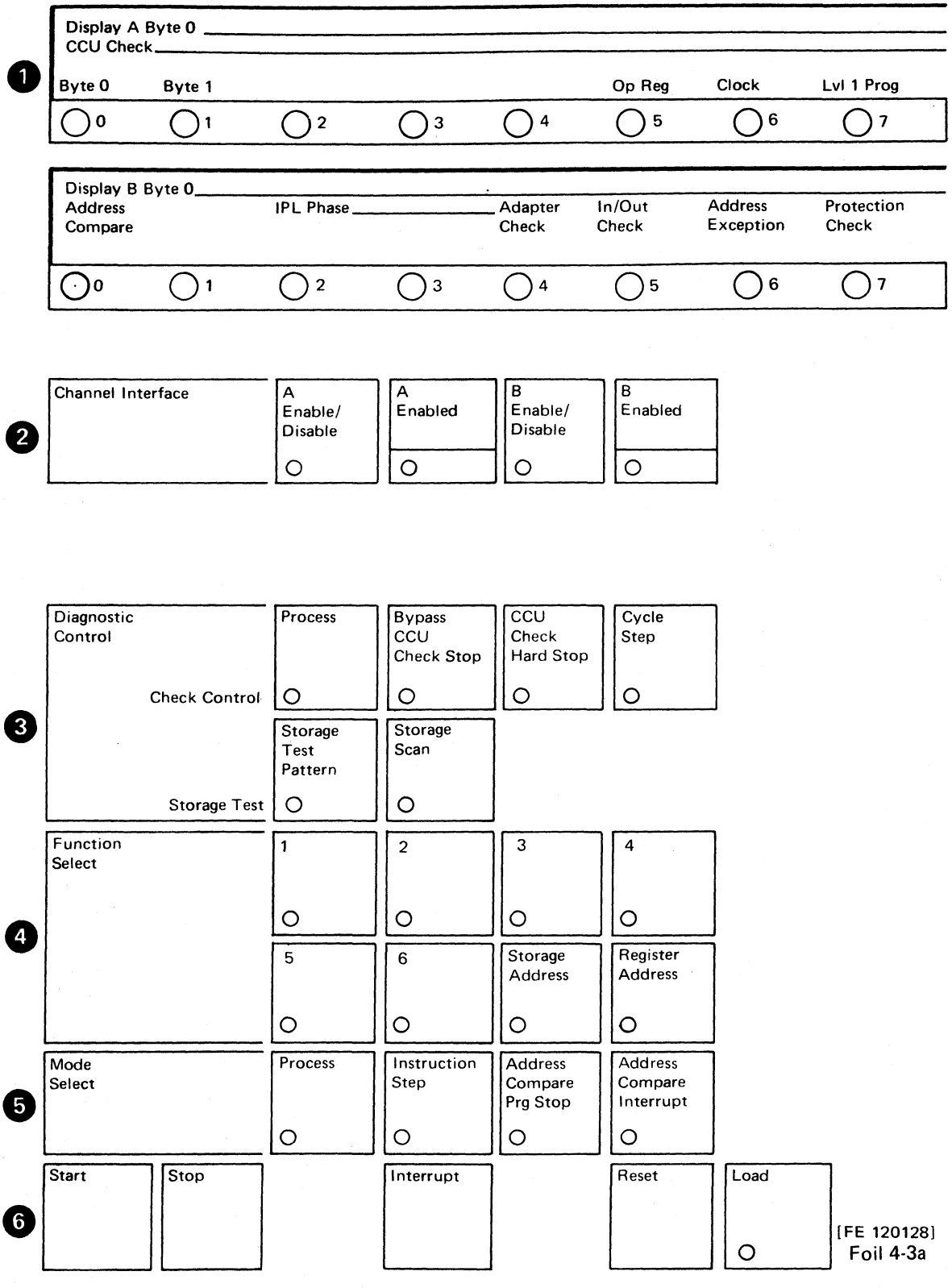
[FE 115122]
Foil 4-1

3705 Console



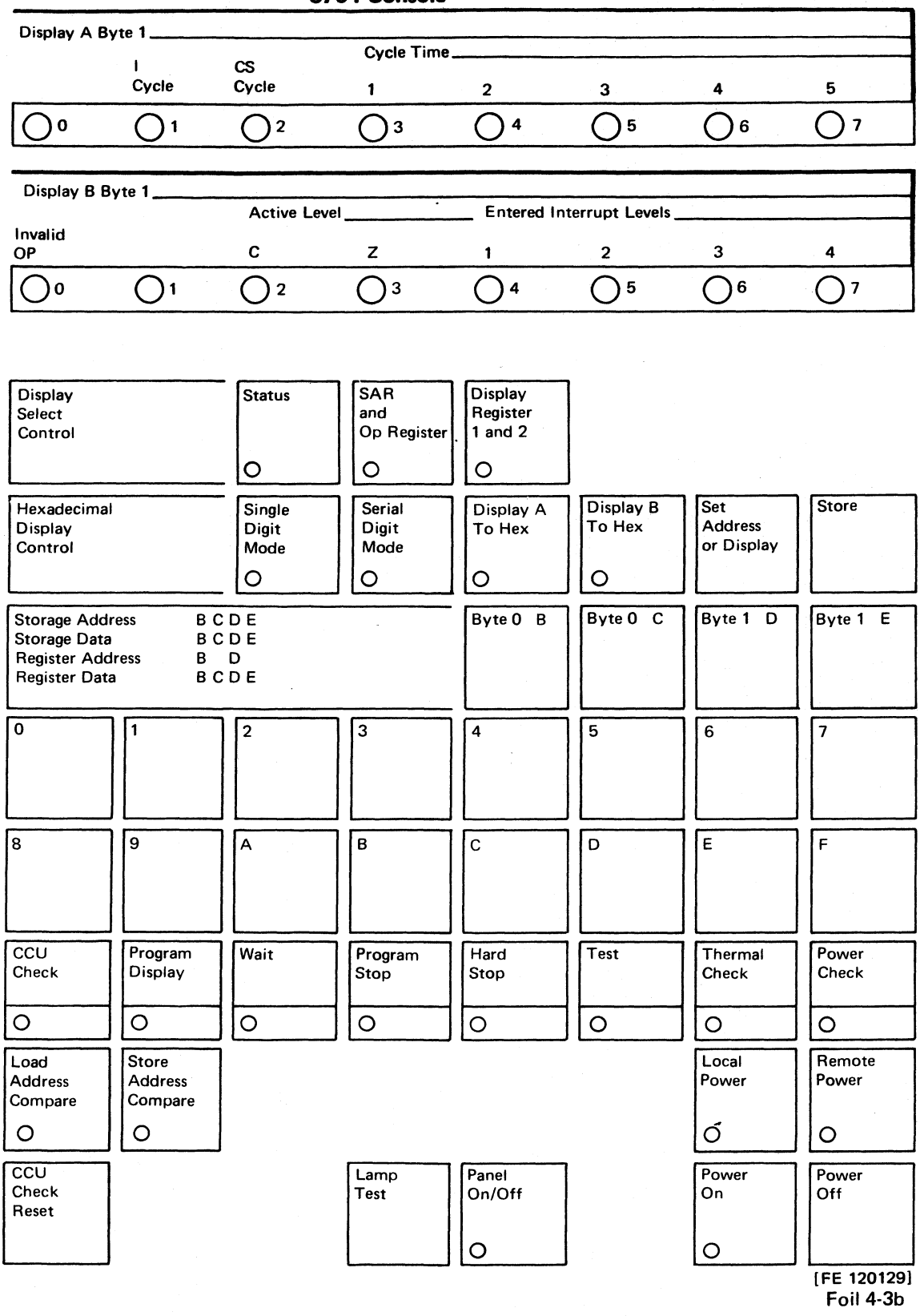
[FE 115121]
Foil 4-2

3704 Console



[FE 120128]
Foil 4-3a

3704 Console



[FE 120129]
Foil 4-3b

Error Types

Program Checks

* Address Exception
* Invalid Op Code
* Protection Check (level 5)
* In/Out Check

Console Panel

* Address Compare Check

CA Checks

* Channel Bus-In Parity
* In/Out Exception
* Local Storage Parity
* CCU Outbus Parity

CS Checks

* LIB Error
* CS Error

CCU Checks

* Any Hardware Condition Affecting CCU Operation

[FE 115123]
Foil 5-1

Interrupt Causes Level 1

Hardware Checks

IPL Phase 1 Completion Error

Central Control Unit Malfunction

Communication Scanner Malfunction

Channel Adapter Malfunction

Program Checks

Invalid Instruction

Protection

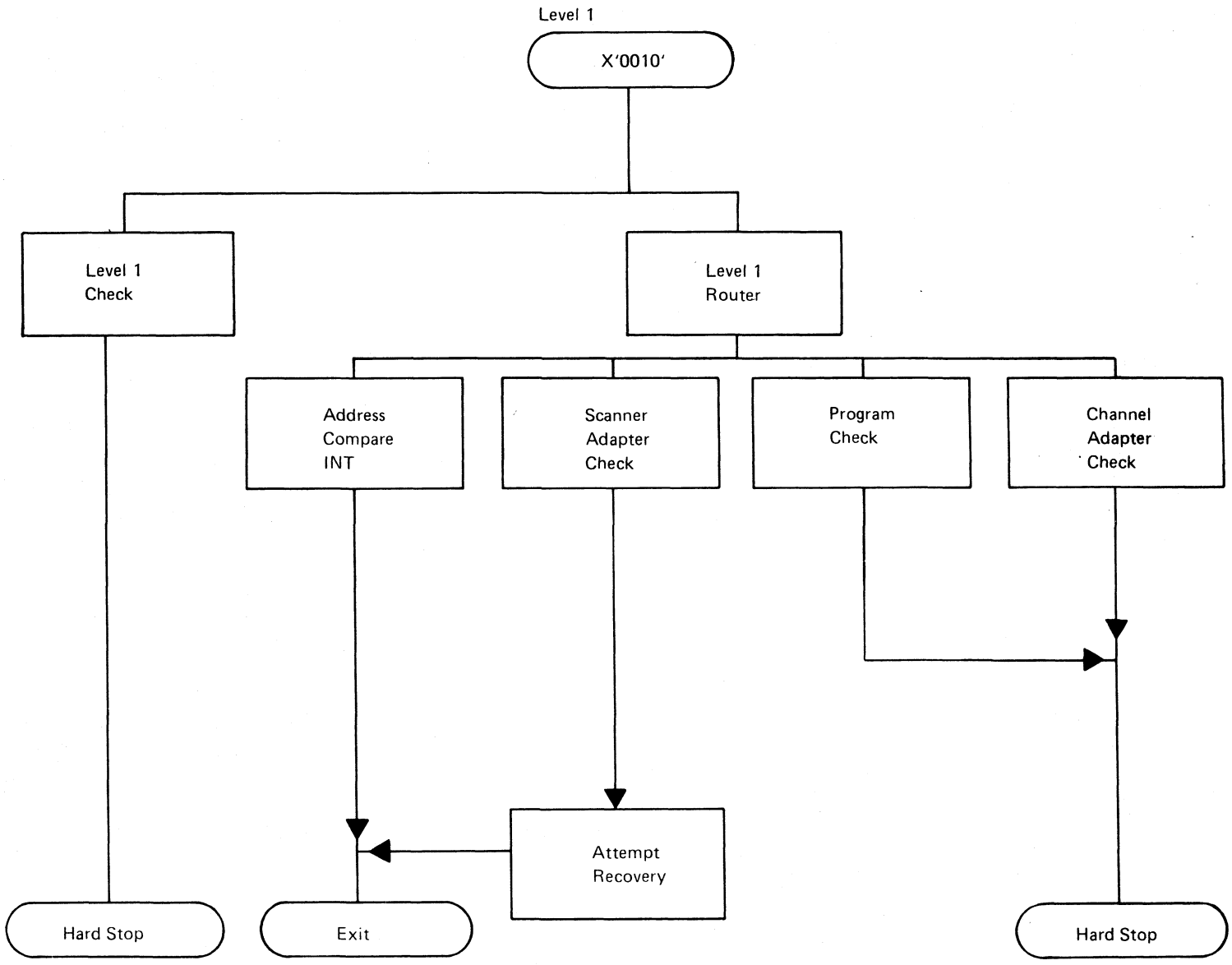
Addressing Outside Core

Operator Controlled Checks

Address Compare Interrupt Request

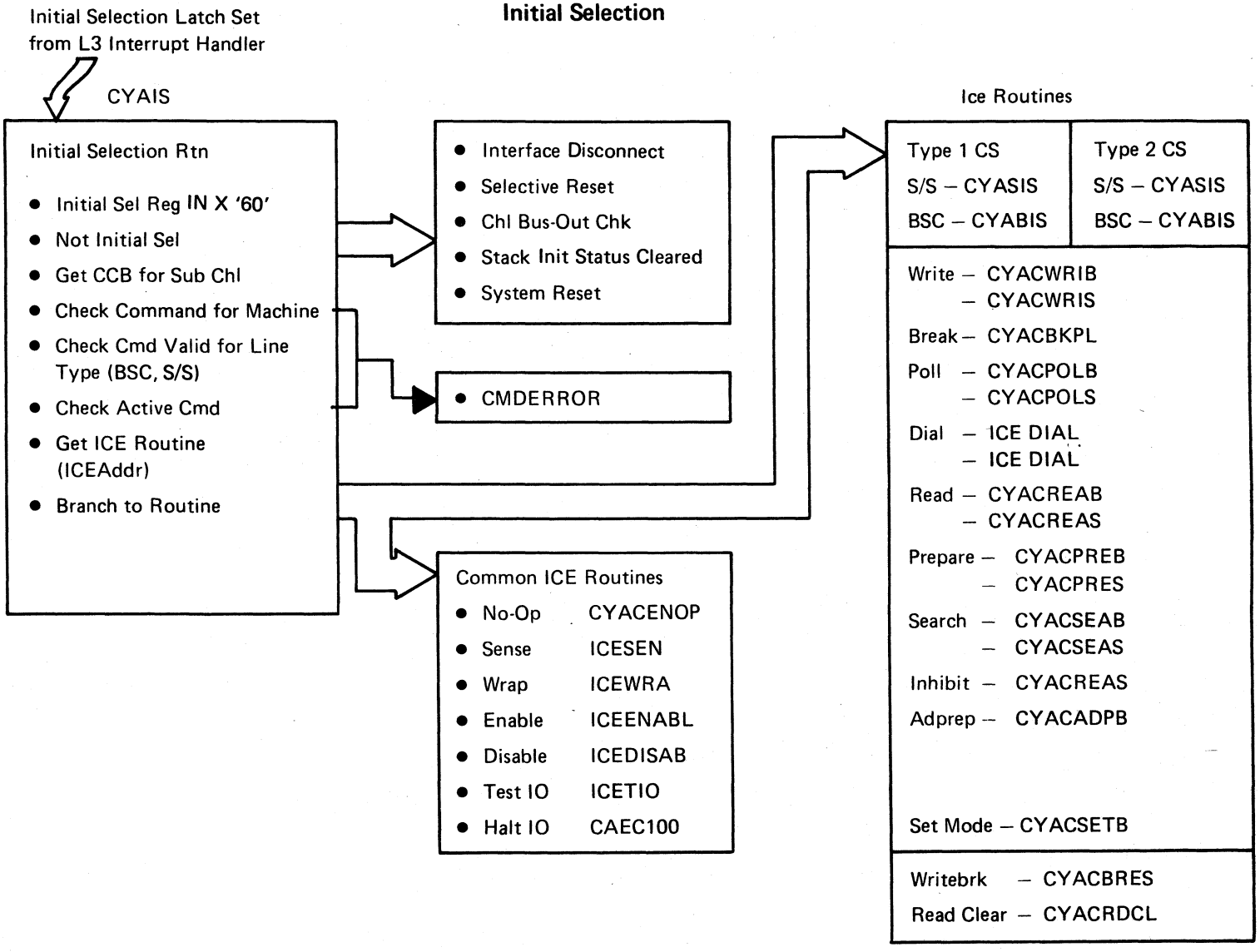
[FE 115125]
Foil 5-2

Level 1 Flow



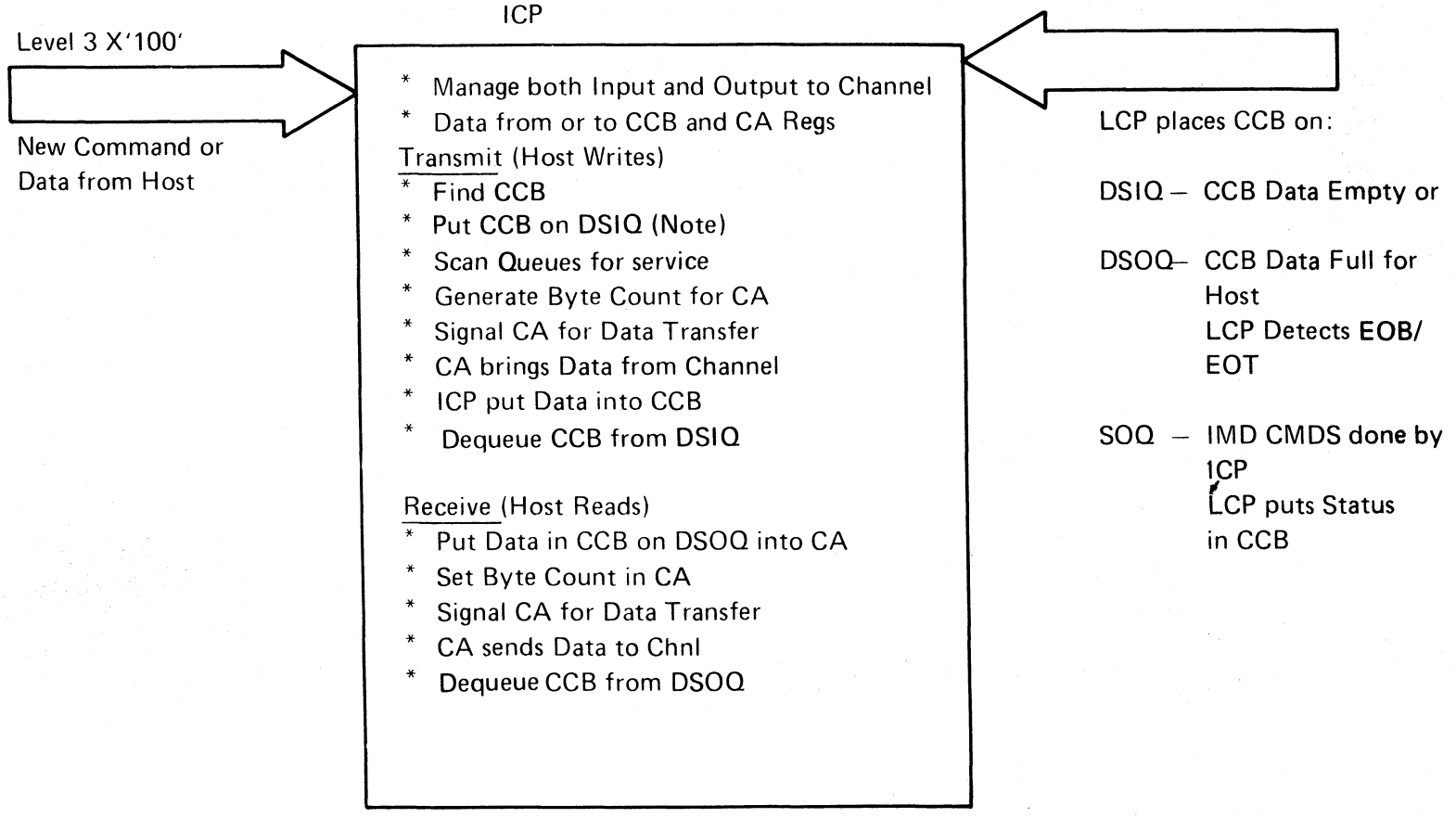
[FE 115124]
Foil 5-3

Initial Selection



[FE 115128]
Foil 6-1

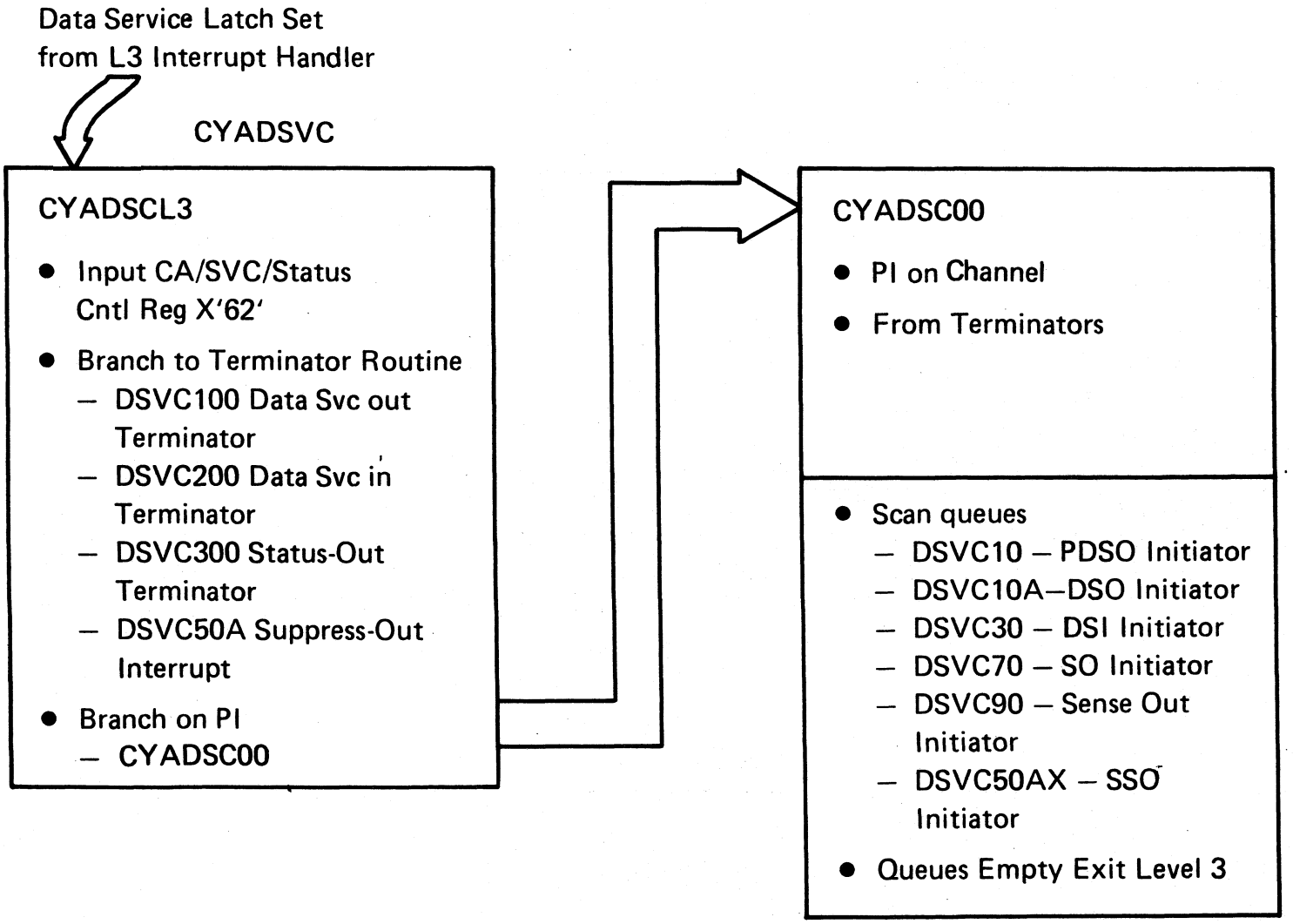
Interface Control Program



Note: For SS This is Done Running in Level 2

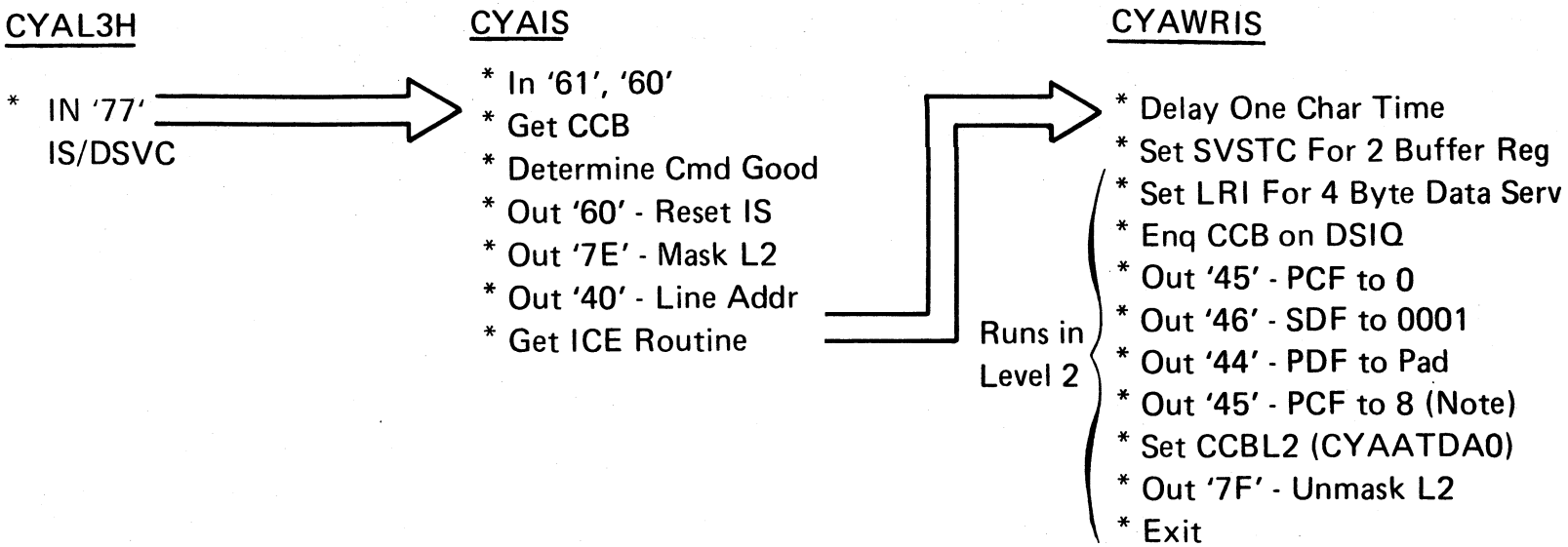
[FE 115129]
Foil 6-2

Data/Status Service Interrupt



[FE 115130]
Foil 6-3

Type 2 CS Initial Selection



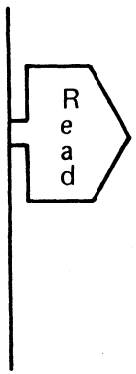
Note: Scanner Will Start Transmission When CTS is Returned by data set. Scanner Will Then Set PCF 9

Write

[FE 115131]
Foil 6-4

Type 2 CS Initial Selection

From CYAIS



CYACREAS

- Load Text Timeout
- Chk if Pseudo Read
- Set CCB CAC/SVSTC
- Out '45' – PCF to 7
- Set CCBL2 (CYABTDA0)
- Out '7F' – Unmask L2
- Exit

Note: Pseudo Read

- Get CCBSVSTC
- ENQ CCB on DSOQ
- If Data End On
- Set CE, DE, Cmd-End
- Exit

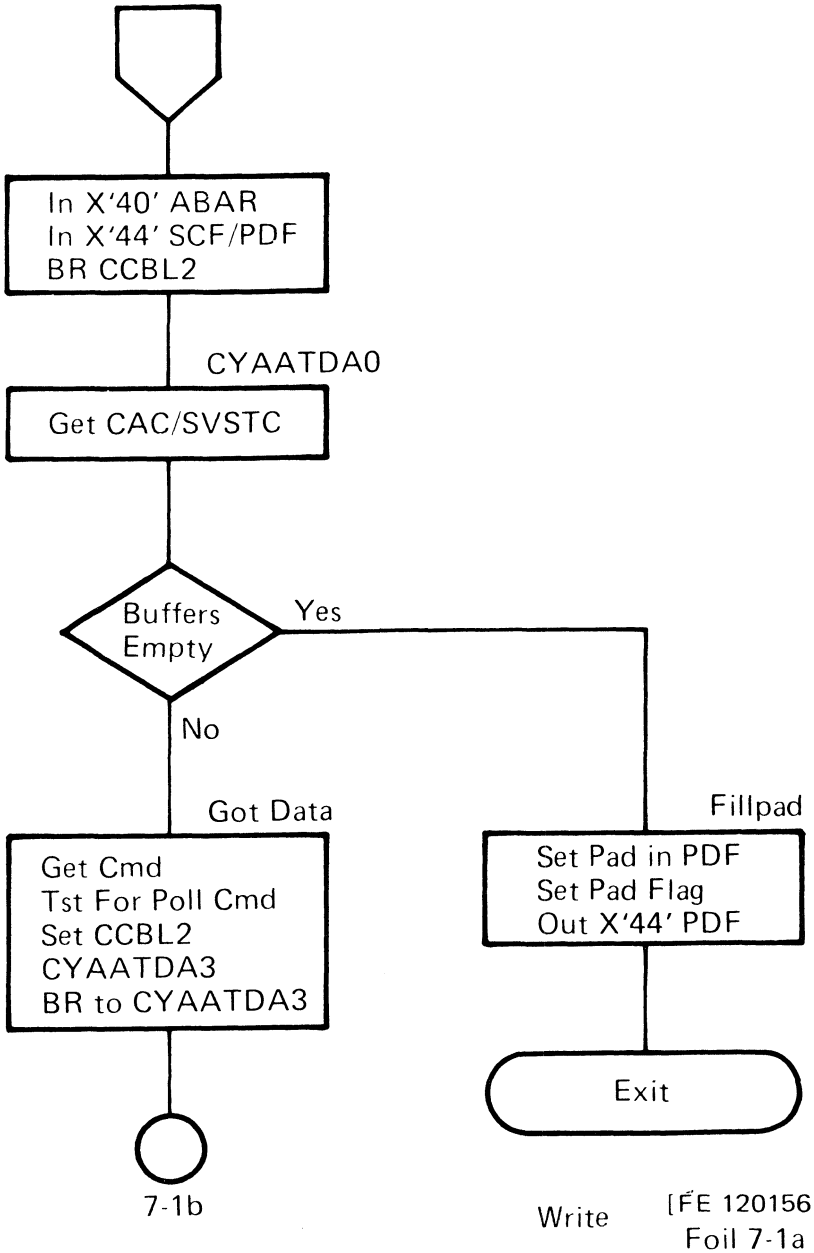
This condition may result when line is left in Read Status and Scanner starts getting data bits from Line and no CCW issued for Read. If both buffers were overfilled before Read/Write Initial Command, an overrun condition CE, DE, UC, overrun would be returned immediately to channel on command.

Read

[FE 115132]
Foil 6-5

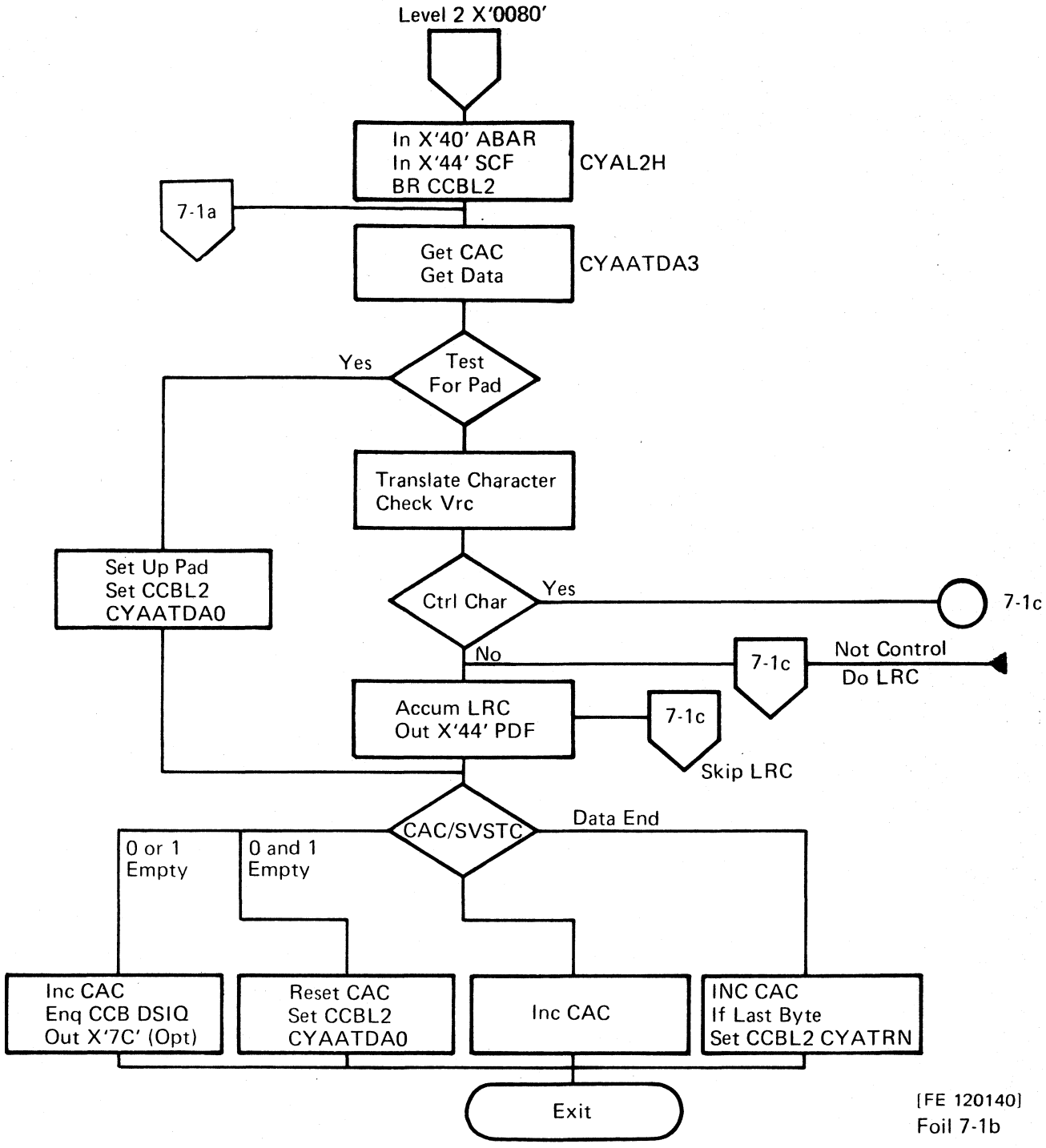
LCP - Write

Level 2 X'0080'



Write [FE 120156
Foil 7-1a

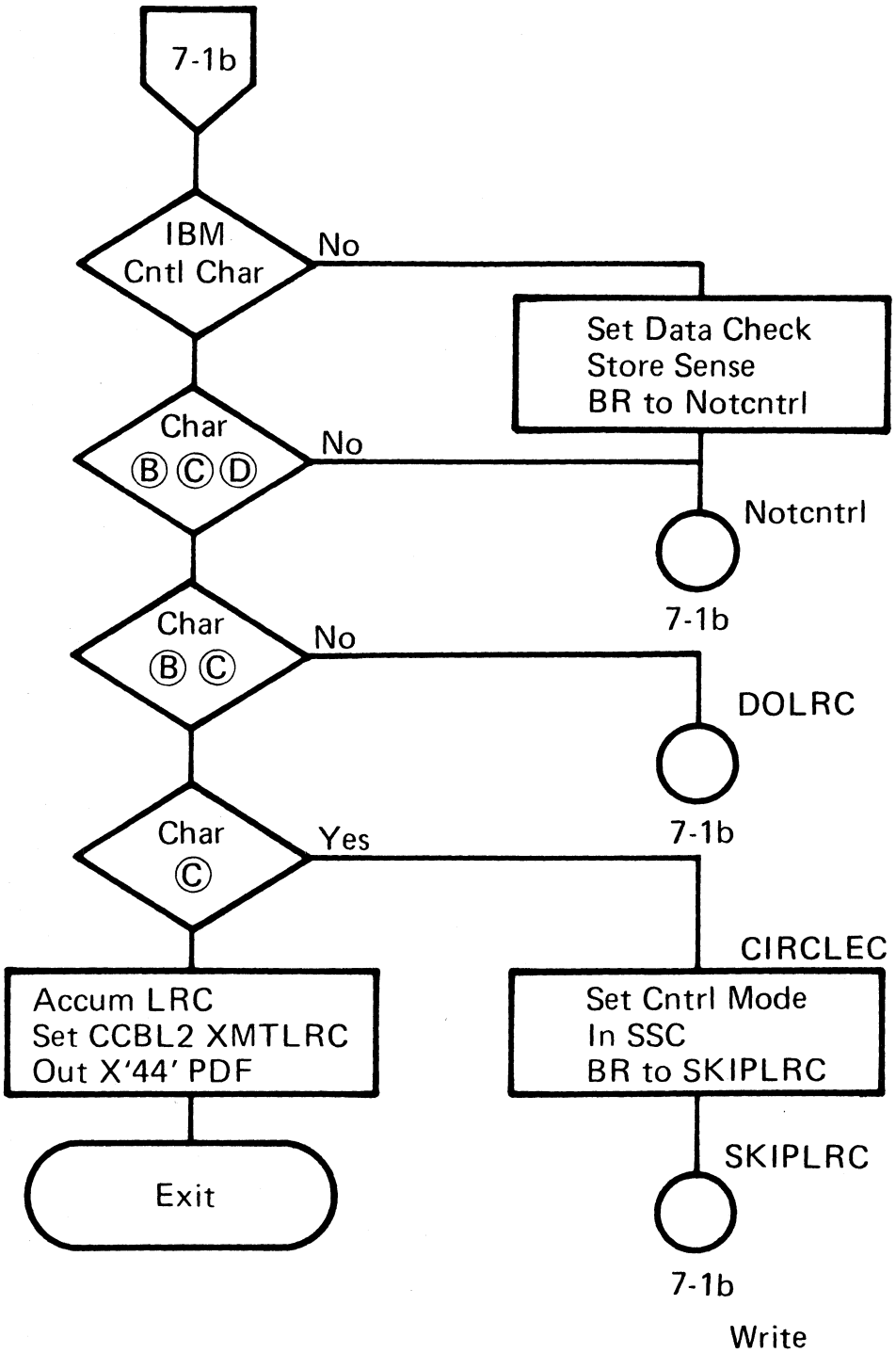
LCP - Write



[FE 120140]
Foil 7-1b

Write

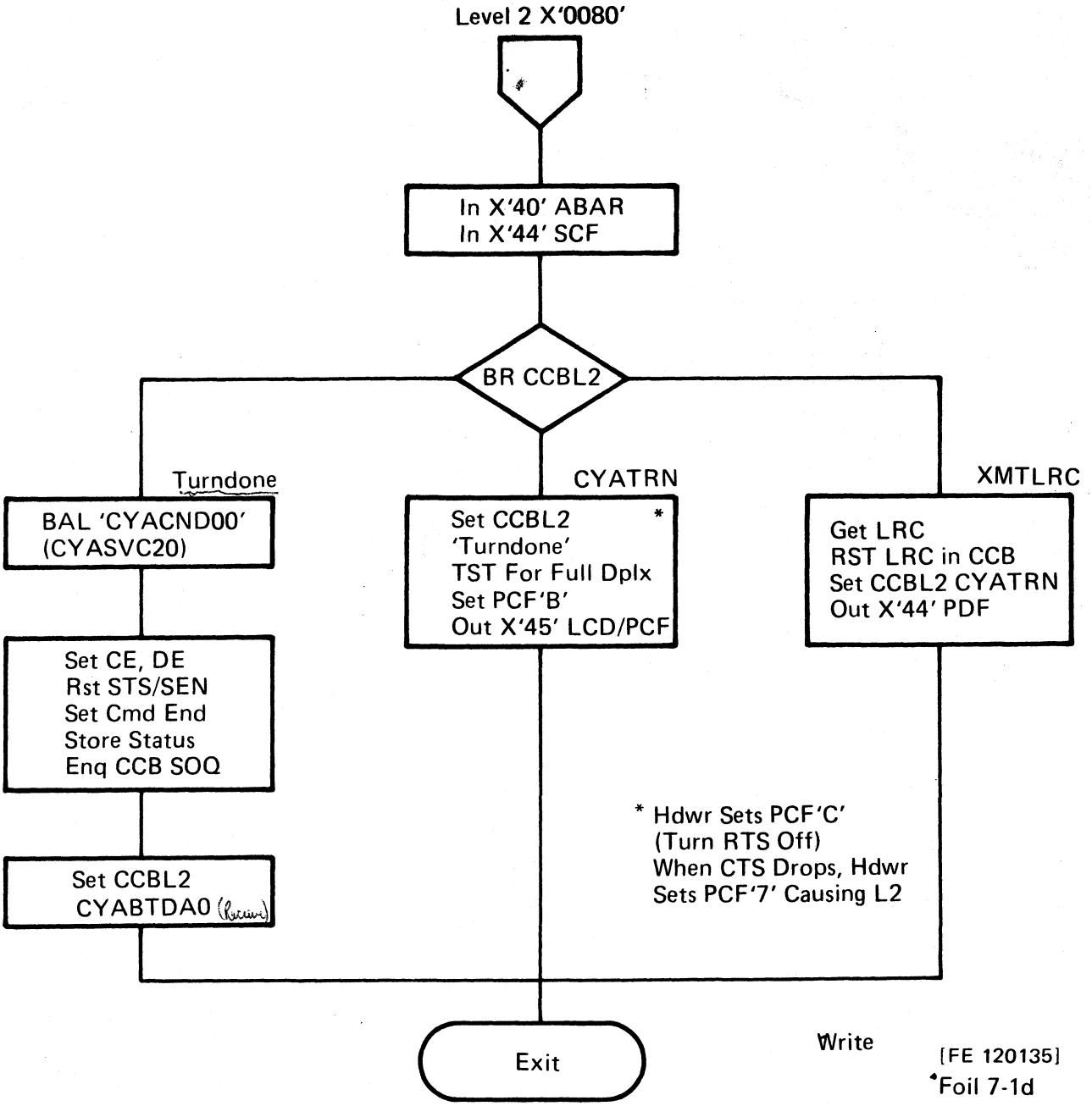
LCP - Write



[FE 120139]
Foil 7-1c

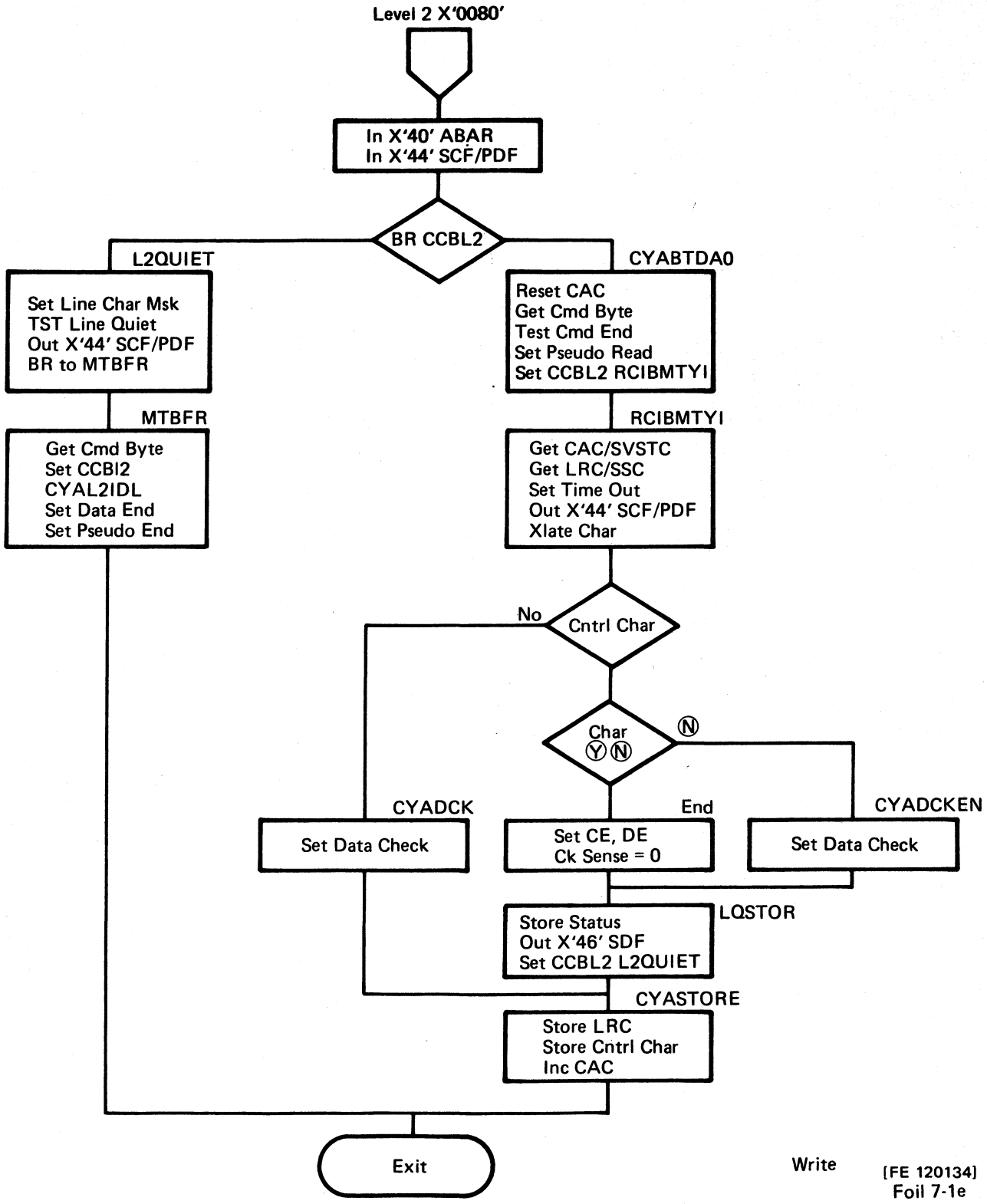
Write

LCP - Write

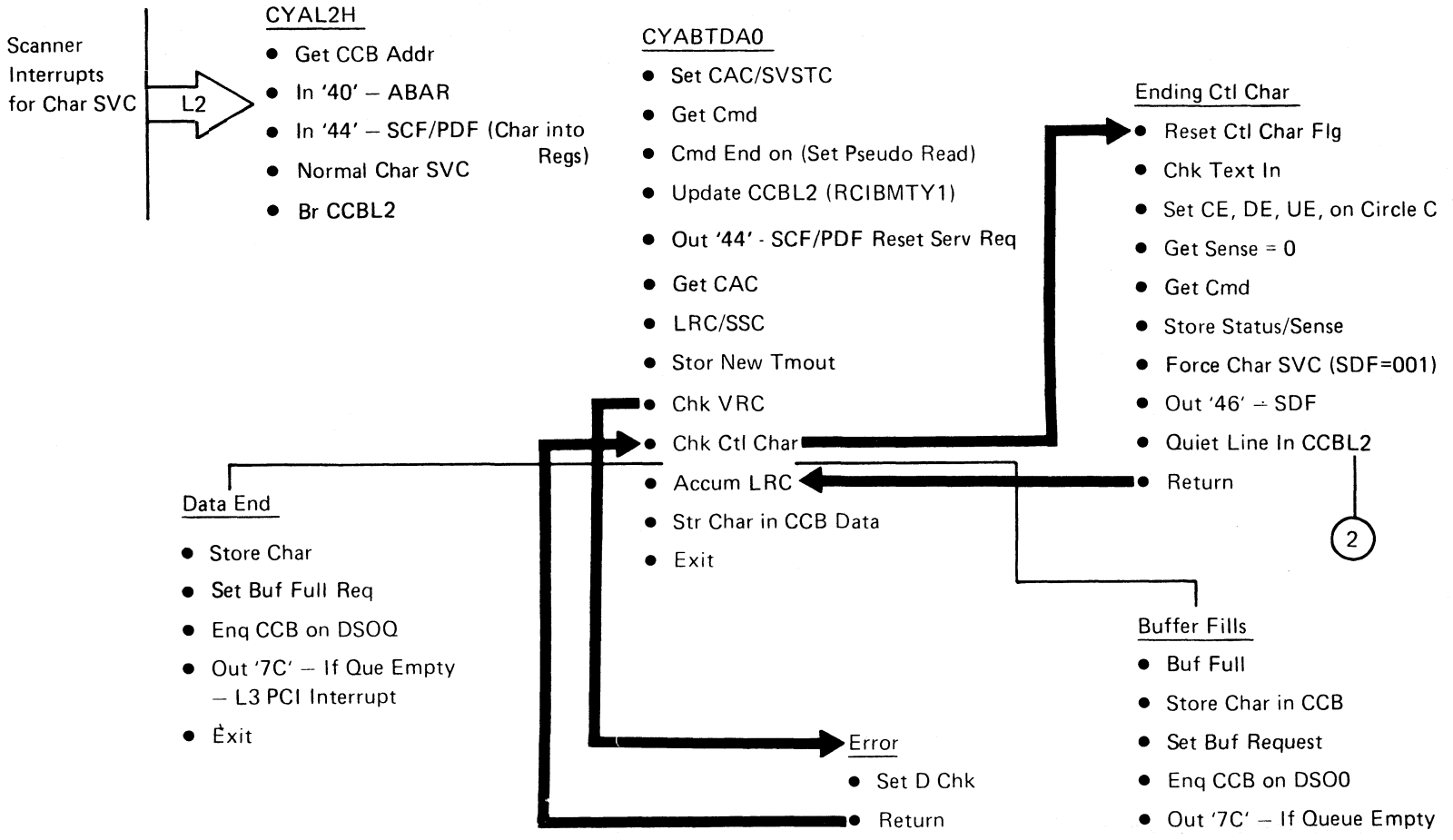


Write [FE 120135]
Foil 7-1d

LCP - Pseudo Read



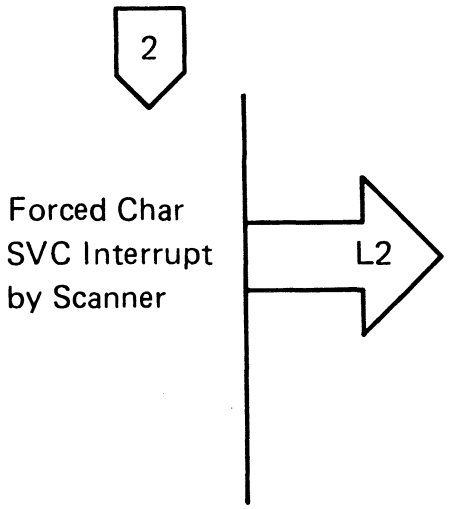
Write [FE 120134]
Foil 7-1e



(5) Read

[FE 115151]
Foil 7-2a

LCP - Read



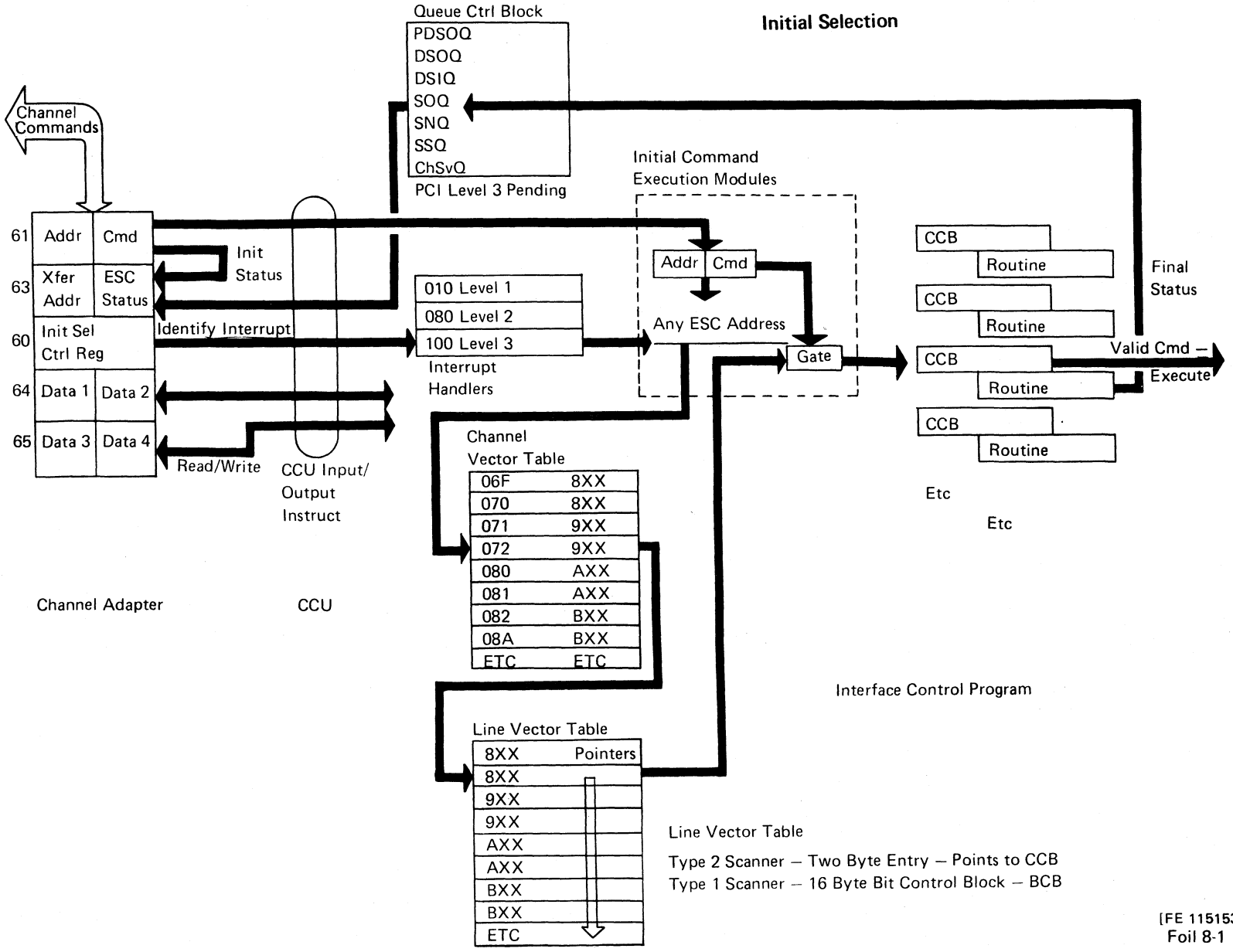
L2 Quiet

- Set Line Char Mask
- Quiet Line to Zero
- Out '44' – SCF/PDF
- Get Cmd Byte from CCB
- Chk Last Data Enq to Chl
- Set CCB to CYAL2IDL)
- Bal CYACND00
  - Set Com End
  - Store Status
  - Enq CCB On SOQ
  - Return
- Exit

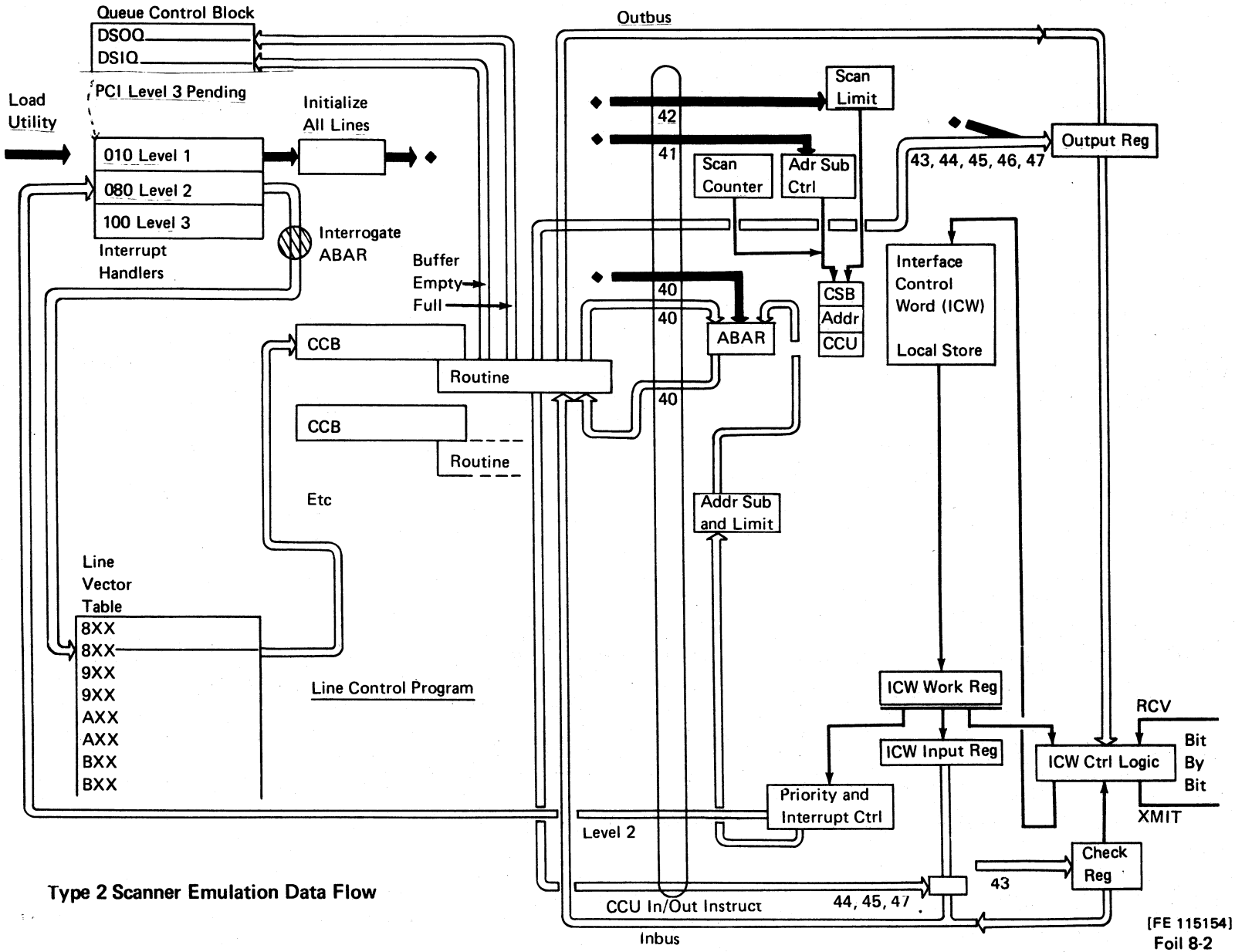
(6) Read

[FE 115152]
Foil 7-2b

Initial Selection



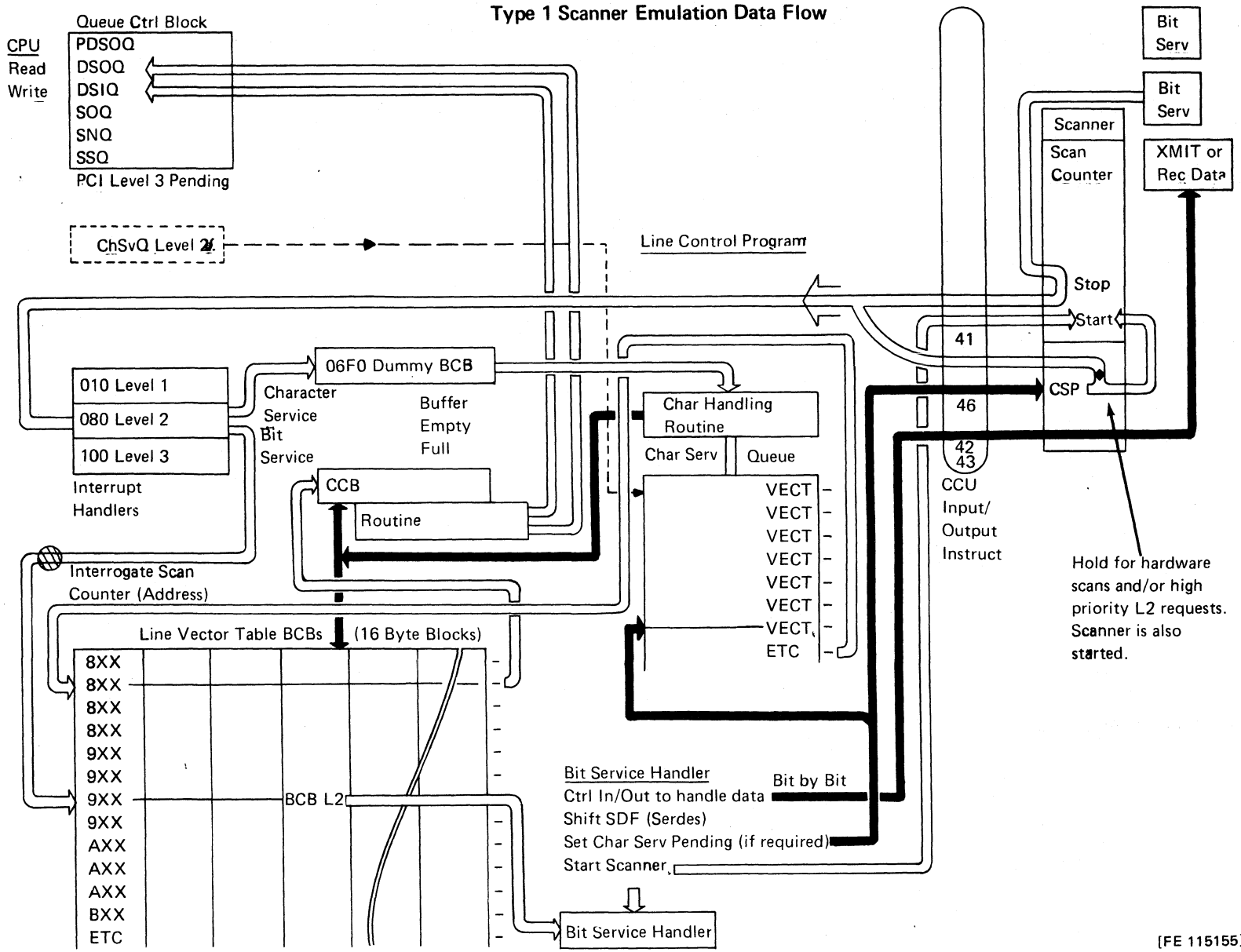
[FE 115153]
Foil 8-1



Type 2 Scanner Emulation Data Flow

[FE 115154]
Foil 8-2

Type 1 Scanner Emulation Data Flow



[FE 115155]
Foil 8-3

Service Aids

1. Console Hard-Stop Error Lights
2. FE Trace Facility
3. Halfword Log Messages Displayed on CE Panel
4. Online Terminal Tests Under BTAM, QTAM, or TCAM
5. OS Error Messages Printed on the CPU Console
6. 3705 Core Dump
7. 2701, 2702, 2703 OLTs Available Under OLTEP or TOTE
8. CE Panel Support
9. Terminal test under OLTEP or TOTE
10. IFTs under OLTEP, OLTSEP, or TOTE
11. Program Microfiche
12. Dynamic Utility
13. Raliegh - TP Test Center

[FE 115156]
Foil 9-1

Build Macro

Name	Operation	Operand
[symbol]	BUILD	HICHAN=subchanaddr, LOCHAN=subchanaddr [,DYNADMP={YES / NO}] [,JOBCARD={YES / NO}]* [,LESIZE=n]* [,LINETRC={YES / NO}] [,LOADLIB=dsname]* [,MODEL={3704 / 3705}] [,NEWNAME={EP001 / symbol}]* [,OBJLIB=dsname]* [,QUALIFY={symbol / NONE / SYS1}]* [,TEST={YES / NO}] [,TYPSYS={OS / DOS}] [,UNIT=unittype]* [,UT1=dsname]* [,UT2=dsname]* [,UT3=dsname]*

* Use for OS only

[FE 120130]
Foil 10-1

Group Macro

Name	Operation	Operand
[symbol]	GROUP	[,CHAREC=((XONOFF[,chars]))] { [XON XOFF],chars NO] [,DELAY={ 600 }] { 1200 { NO } [,DIAL={ NO }] { YES } [,EOB=(character[,F])] [,EOT=(character[,F])] [,LNCTL={ SS }] { BSC } [,REPLYTO={ count }] { 3.0 } [,TEXTTO={ count }] { 25.6 }

Figure 6. The GROUP Macro Instruction

[FE 120131]
Foil 10-2

Line Macro

Name	Operation	Operand
[symbol]	LINE	ADDRESS=(lineaddr,subchanaddr), SPEED=rate* [,AUTO={lineaddr / NONE}] [,CHECK={DCD / NONCD}] [,CHNPRI={NORMAL / HIGH}] [,CLOCKNG={EXT / INT}] [,CODE={EBCDIC / USASCII}] [,CU={2701 / 2702 / 2703}] [,CUTYPE={2972 / 3271 / 3275 / 2845 / 2848}] [,DATRATE={HIGH / LOW}] [,DISABLE={YES / NO}] [,DUALCOM={(lineaddr,{A / B}) / NONE}] [,DUPLEX={HALF / FULL}] [,FEATURE=([DUALCODE / NODUALCD],[,IMEND / NOIMEND],[,LRC / NOLRC],[,SPACE / NOSPACE])] [,INTPRI={0 / 1 / 2 / 3}]

[FE 120132]
Foil 10-3a

Line Macro

Name	Operation	Operand
		[,MODEM={OPTION1 / OPTION2 / NTT}]
		[,MULTI={YES / NO}]
		[,NEWSYNC={YES / NO}]
		[,PAD={YES / NO}]
		[,QUIET={YES / NO}]
		[,RING={YES / NO}]
		[,TADDR={character / NONE}]
		[,TERM=type]
		[,UNITXC={YES / NO}]

* SPEED can be specified on the GROUP or LINE macro.

[FE 120133]
Foil 10-3b

CCB

COMMON

'00'	DATA			
'04'	DATA1			
'08'	SVLNK		SOLNK	
'0C'	SUBCHAN	TYP1 LSC	STAT	SENSE
'10'	CMD	LRI	CSTAT	CSENS
'14'	CAC	SVSTC	CLOCK	
'18'	ACADR		OPT	OPT2
'1C'	STMOD	LCD		

	SS EXT	LRC	SSC
'20'	PEPFL	LGT	
'24'	L2		

	BISYNC EXT	BCC1	BCC2
'20'	PEPFL	SYN	EOT
'24'	L2	FLGB1	FLGB2
'28'	L2A1	DUALCOM	

STATION SELECT

'2C'	SADR	GADR

[FE 120138]
Foil 10-4

SR25-5676-1
Course 10702

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International Business Machines Corporation
Data Processing Division
1133 Westchester Avenue, White Plains, New York 10604
[U.S.A. only]

IBM World Trade Corporation
821 United Nations Plaza, New York, New York 10017
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