

# ELLIOTT

# 900

Volume 3: OPERATING INSTRUCTIONS

Part 2: PROGRAM OPERATING INSTRUCTIONS

Section 1: NOTES ON PROGRAM OPERATING

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Printed in England by  
Engineering Unit, Elliott-Automation Computers Limited.

## Chapter 1: INTRODUCTION

### 1.1 General

Volume 3, Part 2 describes the operation of the standard software programs, described in Volume 2. Instructions for operating test programs will be found in the other parts of Volume 3, in the Sections describing operation of the hardware to be tested.

Throughout this part (Volume 3 Part 2) of the Technical Manual a distinction is made between the person who actually operates the computer and the person who writes or prepares the programs for operation. The former is referred to as the Operator, and the latter as the Programmer, even though these may be one and the same person.

Volume 3 Part 2 is written principally for installations where the operator is distinct from the programmer. No details are given for operation of programs that the programmer can only use by incorporation into his own routines. For details of these programs the programmer must refer to Volume 2 in detail.

Where the programmer acts as his own operator, he should normally refer to Volume 2 for details of all programs, but he may use this part of Volume 3 as a guide.

### 1.2 Notes to Programmers

Operating instructions should be written on a standard form, issued by the computer installation management. The instructions should not assume any knowledge of the program or of software in general, other than that contained in Volume 3 Part 2 of this Manual. (Where certain programs are run regularly on an installation operators may be issued with standard operating instructions, similar to those in this Volume. To avoid confusion, such programs must have short unambiguous names, and the standard operating instructions should be typed or printed.)

The instructions in this Volume are designed to enable a programmer to write simple instructions, which can be unambiguously interpreted by an operator. The programmer may write "compile PROG 4 using ALGOL" instead of writing:-

"Load Algol Translator, enter at 8181"

"Load tape for PROG 4, enter at 8."

The programmer should use standard phrases, wherever possible. He should not assume that operations will be carried out, no matter how obvious they seem, unless they are specifically mentioned in the standard instructions or on his operating sheet.

All tapes supplied must be labelled, and the programmer should specify names for all output tapes. All tapes, except those held in the operating service library for the particular installation, should be supplied by the programmer. The Operators will use standard versions of tapes unless specifically instructed to use other versions.

Operating instructions must be written step by step, with each step numbered in sequence. A column on the right hand side of the page should be left clear for the Operator to tick off each step.

### 1. 3 Notes for Operators

The operator should carry out operations exactly as written by the programmer on the Operating Sheet. This sheet should have a column on the right hand side where the operator should tick off each step when it is complete. It is essential that steps are carried out in the order stated, and that tapes are loaded in the order listed.

The programmer may use any of the instructions listed in this section or other sections of Volume 3, Part 2. The operator should use only the information in these sections, together with the operating sheet and any printed instructions issued within the computer department. If it is not possible to follow the operating sheet using only this information, it should be rejected and returned to the programmer.

All output from the computer should be returned to the programmer, including paper from the control teleprinter. Any error output or unexpected incident should be reported on the Operating sheet, which should always be returned to the programmer. In this case the state of all peripherals should be noted, together with a comment on the loudspeaker sound (i. e. whether set in high or low pitch).

Before commencing any operation it is advisable to check:-

- (1) Is there sufficient tape in the punch?  
(Is the reload button unlit?) Press the run-out button.
- (2) Is there sufficient paper in the teleprinter?
- (3) Is the teleprinter switched to ON LINE?
- (4) Are all tapes mentioned in the operating instructions available?

- (5) Whenever loading a tape, make sure that any legible heading is not read in.

## Chapter 2: GENERAL OPERATIONS

### 2. 1 "Load by Initial Instructions"

This command may be abbreviated to "Load by I.I." it will be followed by one or more names.

Set up 8181 (binary 1111 111 110101) on the address keys. Load the named tape in the paper tape reader and press the "READ" button. The lamp in the "READ" button should be turned off by this operation. If it is not, the reader is incorrectly loaded.

Press the "JUMP" button on the control panel. Unless otherwise stated the "Select Output" and "Select Input" switches should be in the "AUTO" position.

The tape should be read up to and including the last character which is not a blank. If it stops short of this, or carries on until the reader unloads, the tape is faulty or has been misread. If continuous output occurs this should be stopped by pressing the "STOP" button on the computer control unit. This output also indicates misread or faulty tape.

If several names of tapes are listed, the above operation must be repeated for each one, in the order in which they are listed.

### 2. 2 "Load NAME at <n>" (where NAME stands for any title on a tape and <n> is a number) e. g. "Load PROG 6 at 8"

Set up the number <n> on the address keys, in binary form. The 903 Facts Card contains a table to assist with this operation.

Load the specified tape in the reader (as in 2. 1) and press the "JUMP" button.

In this case the tape may be read up till the last non-blank character or up to a halt code.

If it stops anywhere else the occurrence should be noted on the operating sheet. The programmer may request that the position at which the tape stops should be marked on the tape. If this is done the tape must be first removed from the reader, to avoid damaging the transparent light mask cover.

### 2. 3 "INPUT 'NAME' FROM TELEPRINTER at <n>"

Where NAME stands for the data to be punched on the teleprinter and n is a number. The number <n> is set up on the key board, the teleprinter

switch turned to ON LINE, and the Input Select switch turned to "TELEPRINTER". The JUMP button is pressed and the data (NAME) is punched on the teleprinter.

#### 2. 4 "ENTER AT <n>" (Name 1)

If a tape is to be read in "LOAD TAPE at <n>" otherwise set up <n> on the keyboard, press JUMP button.

#### 2. 5 Other Commands

Other commands, such as "Compile", are specific to the software program that is being used, and are described in other sections of Part 2. Appendix 1 of this section gives a complete list of commands with references to the appropriate section.

## Appendix 1: LIST OF PROGRAM OPERATING COMMANDS

A list of commands defined in Volume 3, Part 2 is given below. The programmer may incorporate these into his operating instructions to avoid repetition of detail.

The reference numbers specify the section of Volume 3, Part 2 and the Chapter and sub-chapter number.

	"LOAD BY INITIAL INSTRUCTION"	3. 2. 1.	2. 1
	"LOAD BY I. I"	3. 2. 1.	2. 1
	"LOAD NAME at <n>"	3. 2. 1.	2. 2
	"INPUT NAME FROM TELEPRINTER at <n>"	3. 2. 1.	2. 3
	"ENTER at <n>"	3. 2. 1.	2. 4
	"SET UP S. I. R. ASSEMBLER"	3. 2. 2.	2. 1
	"ASSEMBLE (BY S. I. R.)"	3. 2. 2.	2. 2
	"RUN S. I. R. PROGRAM"	3. 2. 2.	2. 3
	"RUN S. I. R. PROGRAM AT ENTRY POINT"	3. 2. 2.	2. 4
	"ASSEMBLE TO PAPER TAPE (with S. I. R.)"	3. 2. 2.	2. 5
	"RESET S. I. R. AND CLEAR STORE"	3. 2. 2.	2. 6
	"ASSEMBLE TO PAPER TAPE WITH LOADER"	3. 2. 2.	2. 7
	"LOAD INITIAL R. L. B. TAPE"	3. 2. 2.	2. 8
	"LOAD RELATED R. L. B. (Relocatable BINARY) TAPE"	3. 2. 2.	2. 9
ALGOL	"SET UP ALGOL TRANSLATOR"	3. 2. 3.	1. 4
	"SET UP ALGOL INTERPRETER"	3. 2. 3.	1. 5
	"CONTINUE AT <9>"	3. 2. 3.	1. 6
	"TRANSLATE (ALGOL)" Name	3. 2. 3.	2. 1
	"CHECK IN REPORT MODE" Name	3. 2. 3.	2. 2
	"TRANSLATE IN LIBRARY MODE" Name	3. 2. 3.	2. 3
	"TRANSLATE WITH CHECKS" Name	3. 2. 3.	2. 4



	"TRANSLATE IN LIBRARY MODE WITH CHECKS"	3. 2. 3.	2. 5
	"RUN ALGOL"	3. 2. 3.	2. 6
	"RESTART"	3. 2. 3.	2. 7
	"REPEAT RUN"	3. 2. 3.	2. 8
	"LOAD OVER LIBRARY AND RUN"	3. 2. 3.	2. 9
	"LOAD AND RUN Name 1. with R.L.B. PROCEDURE (S)" Name 2. Name 3.	3. 2. 3.	2. 10
	"LOAD Name 1 OVER LIBRARY AND RUN WITH R. L. B. PROCEDURE(S)" Name 2, Name 3.	3. 2. 3.	2. 11
FORTRAN	"SET UP FORTRAN TRANSLATOR (TAPE 1)"	3. 2. 4.	2. 1
	"SET UP FORTRAN RUN TIME ROUTINES (TAPE 2)"	3. 2. 4.	2. 2
	"SET UP FORTRAN COMPILER 16K"	3. 2. 4.	2. 3
	"TRANSLATE (with Fortran)" Name 1, Name 2, Name 3.	3. 2. 4.	2. 4
	"CHECK IN REPORT MODE (Fortran)"	3. 2. 4.	2. 5
	"TRANSLATE INDEPENDENTLY (with FORTRAN)" Name 1, Name 2.	3. 2. 4.	2. 6
	"RUN IN BATCH MODE"	3. 2. 4.	2. 7
	"RUN IN BATCH MODE WITH STORE MAP"	3. 2. 4.	2. 8
	"PRODUCE RELOCATABLE OBJECT CODE"	3. 2. 4.	2. 9
	"RUN IN RELOCATABLE MODE" Name 1, Name 2.	3. 2. 4.	2. 10
	"RUN IN BATCH MODE Name 1, WITH PRE-TRANSLATED Name 2, Name 3. "	3. 2. 4.	2. 11
	"RUN IN RELOCATABLE MODE Name 1 with PRE-TRANSLATED Name 2, Name 3. "	3. 2. 4.	2. 12

UTILITY PROGRAMS	"DUMP USING T22"	3. 2. 5.	1. 3
	"EDIT" Name 1.	3. 2. 5.	2. 4
	"COPY USING QCOPY"	3. 2. 5.	3. 4
	"COPY USING COPY TAPE"	3. 2. 5.	4. 3