ELLIOTT 900

Volume 3: OPERATING INSTRUCTIONS

Part 2: PROGRAM OPERATING INSTRUCTIONS

Section 3: OPERATING PROCEDURE FOR ALGOL PROGRAMS

Contents

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Chapter 1: INTRODUCTION

1.1 General

Algol are translated and run in two stages.

The program punched on paper tape is converted by the ALGOL TRANSLATOR (Tape 1) into a form of intermediate code instructions. On a basic 8192 word machine these are output in a 'relocatable binary' form on paper tape.

The ALGOL INTERPRETER (Tape 2) is used to load the intermediate code into store and then obey the Algol program by interpreting these coded instructions.

The original Algol text is referred to as 'Source code', and the output during translation is 'Object code'.

1.2 Notes to Programmers

When any program is being translated for the first time, or in any case where syntactic errors are anticipated, much time can be saved by doing a "CHECK IN REPORT MODE" (paragraph 2. 2) before a full translation. This checks the program for syntactic errors, but does not punch any object code.

If an error is found during ordinary translation, production of object code ceases, but the rest of the tape is automatically checked in Report Mode.

The normal procedure for running a straightforward Algol program which has been punched on one tape is covered by the commands:

(1)	CHECK IN REPORT MODE	(2. 2) (Optional)
(2)	TRANSLATE ALGOL	(2. 1)
(3)	RUN ALGOL	(2. 6)

If the program is too big to be run by this method extra store at run time may be gained by using the sequence:

(1)	"TRANSLATE IN LIBRARY MODE"	(2. 3)
(2)	"LOAD OVER LIBRARY AND RUN"	(2. 9)

This ensures that only those library routines actually required by the program are in store at run time.

Any SIR code procedures required for the Algol program must be assembled to paper tape (see Vol. 3. 2. 2., 2. 5) if they are not already in relocatable binbary form. These "RLB procedures" are then included at run time by specifying commands 2. 10 or 2. 11. (Volume 2. 1. 2 Chapter 3. 4. 10. 1 gives an alternative method).

1. 3 Notes to Operators

The three switches controlling levels 1, 2 and 3 on the control panel should always be set to the Manual (down) position, unless the settings are specifically requested by the programmer.

The operator must not attempt to run any program where there is a legible X at the end of the object code. On completion of any program, 'FINISH' will be output. Continue with the next operation.

Programs should be translated, and run, in batches where possible, to save continually re-inputting the translator and the interpreter.

1. 4 "SET UP ALGOL TRANSLATOR"

If the translator is in store and there is no evidence that it has been corrupted, then ignore this command, otherwise "LOAD ALGOL TRANSLATOR (Tape 1) by INITIAL INSTRUCTIONS".

1. 5 "SET UP ALGOL INTERPRETER"

If the interpreter is already in store, and there is no evidence that it has been corrupted, ignore, otherwise "LOAD ALGOL INTERPRETER (Tape 2) by INITIAL INSTRUCTIONS".

1. 6 "CONTINUE AT 9"

Set value 9 on keyboard, press <JUMP> button.

Chapter 2: COMMANDS

2. 1 "TRANSLATE (ALGOL)" Name 1, Name 2

Step 1 "SET UP ALGOL TRANSLATOR" (See 1. 4).

Step 2 "LOAD NAME 1 at 8"
If name 1 contains a halt code.
"CONTINUE at 9"

Step 3 If program continues on subsequent tapes
"LOAD Name 2 at 9" where Name 2 refers to
all subsequent tapes.

If legible X is output on tape, see Note 1 below.

If standard trailer of 50 blanks, 6 erases,
100 blanks has not been output, see Note 2 below.

If no legible X present, standard trailer output,
then program has translated correctly and may be
run.

Note 1. When an error is detected, a legible X is output
at the end of the tape, and no attempt should be
made to run the program.

Note 2. When a program has been translated correctly a
standard trailer of 50 blanks, 6 erases,
100 blanks should be output.

If it is not output when the end of the last tape is
reached then:

"LOAD TAPE 3 at 9" where tape 3 refers to
ALGOL LIBRARY (Tape 3).

2. 2 "CHECK IN REPORT MODE" Name 1

Step 1 "SET UP ALGOL TRANSLATOR"

Step 2 "LOAD Name 1 at 10"
If halt code occurs.
"CONTINUE at 9"

2. 3 "TRANSLATE IN LIBRARY MODE" Name 2

Step 1 "SET UP ALGOL TRANSLATOR"

Step 2 "LOAD Name 1 at 12"
If halt code occurs
"CONTINUE at 9"

Step 3 Then procede as from 2. 1., step 3.

2. 4 "TRANSLATE WITH CHECKS" Name 1

Step 1 "SET UP ALGOL TRANSLATOR (Tape 1)"

Step 2 "LOAD Name 1 at 11"
If halt code occurs,
"CONTINUE at 9"

Step 3 Then procede as from 2. 1 step 3.

2. 5 "TRANSLATE IN LIBRARY MODE WITH CHECKS"

Step 1 "SET UP ALGOL TRANSLATOR (Tape 1)"

Step 2 "LOAD Name 1 at 13"
If halt code occurs,
"CONTINUE at 9"

Step 3 Then procede as from 2. 1 step 3.

2. 6 "RUN ALGOL" Name 1

Step 1 Check that no legible X occurs on end of Name 1.
If X present, return tapes to programmers.

Step 2 "SET UP ALGOL INTERPRETER (Tape 2)"

Step 3 "LOAD Name 1 at 8"

Step 4 If data tape provided "LOAD AT 10"
else "ENTER at 10"
If halt code on data tape
"CONTINUE at 9"

ERRORS: If FE is displayed on loading, or if ERROR 2 is output on running, unless the programmer specifically forbids it, the program should be

(1) "TRANLATED IN LIBRARY MODE"

(2) "LOAD OVER LIBRARY AND RUN"

2. 7 "RESTART"

If another data tape provided,

"LOAD data tape at 9"
else "ENTER at 9"

2. 8 "REPEAT RUN"

To repeat entire program from beginning "ENTER at 10".

2. 9 "LOAD OVER LIBRARY AND RUN" Name 1

Step 1 "SET UP ALGOL INTERPRETER"

Step 2 "LOAD Name 1 at 13"

Step 3 "ENTER at 10"

2. 10 "LOAD AND RUN Name 1 WITH R. L. B. PROCEDURE(S) Name 2, Name 3"

Step 1 "SET UP ALGOL INTERPRETER"

Step 2 "LOAD Name 1 at 8"

Step 3 "LOAD Name 2 at 11"

Step 4 "LOAD Name 3 at 11"

Step 5 "ENTER at 10"

2. 11 "LOAD Name 1 OVER LIBRARY AND RUN WITH R. L. B. PROCEDURES, Name 2, Name 3"

Step 1 "SET UP ALGOL INTERPRETER"

Step 2 "LOAD Name 1 at 13"

Step 3 "LOAD Name 2 at 11" - repeat for all other R. L. B. Procedures.

Step 4 "ENTER at 10"