(6) Step 32. The column in error is stored in GRASE-6.

(7) Steps 33-34. GRASE-6 is examined. If no error has been indicated, the subprogram continues at step 42. The columns in error are indicated by setting to one the proper bits in CLEL.

(8) Step 35. The error indicator SW(70) is set ØN.

(9) Step 36. The index registers are restored to their original settings and the subprogram exits to the user subprogram.

(10) Steps 37-41. SW(73) is interrogated to determine if the input is a LON card (SW(73) = ØN). If the input is neither a LAT nor a LON card, columns 4-6 are stored in GRASE-6 and the subprogram continues at step 33. If SW(73) is ØN, column 14 is examined. If not zero, the column is stored in GRASE-6 and the subprogram continues at step 33. If column 14 is zero, the subprogram continues at step 33

(11) Step 42. The seconds, minutes, and degrees are converted to binary. Seconds are converted to fractional minutes and minutes to fractional degrees. The conversion is done twice using two different methods. The results from the first and second methods are compared. If not in agreement, an 11 is stored in the type of error indicator ITYER and control is transferred to step 35. Otherwise, the converted degrees are stored in UDGCN and the subprogram continues at step 36.

2-141. SUBPROGRAM U41 (U41). U41 converts BCD card information to binary information. The FORTRAN II reference statement is CALL U41 (A, B).

a. Inputs. The inputs are the arguments A and B where A is the first column to be interpreted and B is the number of columns to be interpreted, and the following registers:

COMMON TAG	DIMENSION	ITEM	UNITS
CDI0	1	Card image - cols 1-6	BCD
CDI1	1	Card image - cols 7-12	BCD
CDI2	1	Card image - cols 13-18	BCD
CDI3	1	Card image - cols 19-24	BCD
CDI4	1	Card image - cols 25-30	BCD
CDI5	1	Card image - cols 31-36	BCD
CDI6	1	Card image - cols 37-42	BCD
CDI7	1	Card image - cols 43-48	BCD
CDI8	1	Card image - cols 49-54	BCD
CDI9	1	Card image - cols 55-60	BCD
CDI10	1	Card image - cols 61-66	BCD

b. Outputs. The outputs are as follows:

COMMON TAG	DIMENSION	ITEM	UNITS
CLER	1	Errors in columns 37-72	BIT
CLEL	1	Errors in columns 1-36	BIT
ITYER	1	Error type register	Integer
UDGCN	1	Converted datum	

The following printed and written statement is also an output:

ALL COLUMNS TO BE CONVERTED BY U41 CONTAIN BLANKS

c. Program Logic. FD U41

(1) Steps 1-17. The contents of the index registers are saved and SENSE light 1 is set OFF. The column number is divided by six, and the quotient and remainder are used to position the proper BCD character and find the card image address of the first BCD word. The error routine is initialized to store error bits in CLEL or CLER, depending on whether the first column is before or after column 37.

(2) Steps 18-23. The columns in the card are checked for a significant character. On finding the first non-blank column, control is transferred to step 24. If all of the columns contain blanks, U08 prints and writes the error statement and control is transferred to step 59.

(3) Steps 24-27. The first non-blank character is saved and the error and column count indicators are cleared. All SENSE lights are turned OFF and initialization is made for conversion without decimal point.

(4) Steps 28-34. If the BCD character is not a number, control is transferred to step 41 for interpretation. If the character is a number and no error has occurred thus far, it is added to the product formed in conversion. If this does not cause an overflow, the next BCD character is positioned.

If an error has occurred thus far, SENSE light 4 is turned ON and no addition takes place.

(5) Steps 35-40. If the character just processed was from column 36, any error bits for columns 1-36 are set in CLBL, column 37 is positioned, and the error routine is reset to store error bits for columns 37-72 in CLER. If all columns in the card have been processed, control is transferred to step 58. Otherwise, the next BCD word is obtained, if the current word has been fully converted, and control is transferred to step 28 to process the next character.

(6) Steps 41-57. If the current character is a (+), N, or W, and SENSE light 2 is not already ON, it is set ON. If the character is a (-), E, or S, and SENSE light 3 is not already ON, it is set ON. If the character is a decimal point and SENSE light 1 is not already ON, it is set ON. If the character is not any of these, or if the respective SENSE light is already ON, SENSE light 4 is set ON to indicate an error and the proper error bit is stored in CLBL or CLER. In all cases, control is transferred to step 35, restoring the previous condition of SENSE light 1, 2, or 3, if necessary.

(7) Steps 58-68. This point is entered after all columns have been processed. If any errors have been detected (SENSE light 4 = ON), ITYER is set to four to indicate a card error, and control is transferred to step 76. If the interpreted sign was negative, the sign of the converted data is changed. If the quantity equals zero, or if no decimal point

has been detected (SENSE light 1 = OFF), control is transferred to step 78. Otherwise, the integer is converted to floating point and normalized. If the normalized value is positive, the floating point exponent of 27 decimal is added; otherwise it is subtracted.

(8) Steps 69-73. If an illegal exponent has been detected, control is transferred to the error routine at step 74. If not, the subprogram computes the floating binary equivalent of the integer times the power of ten given by its true exponent. If an error occurs in this computation, control is transferred to step 74. Otherwise, the converted BCD characters are stored in DATUM + 1, and the floating point equivalent of the integer is computed, using a different algorithm, and stored in DATUM.

(9) Steps 74-77. Error Routine, SENSE light 4, and SW(70) are set ON, ITYER is set to eleven to indicate a machine error, and zero is stored in DATUM and DATUM + 1. Control is then transferred to step 80.

(10) Steps 78-79. If the converted BCD integer in N and N + 1 are not equal, control is transferred to the error routine at step 74. Otherwise, the integers are stored in DATUM and DATUM + 1.

(11) Steps 80-82. The converted word, if any, in DATUM + 1 is stored in UDGCN. Error bits are stored in CLBL or CLBR, the contents of the index registers are restored, and control is returned to the user subprogram.

(2-291 and 2-292 deleted)

2-142. SUBPROGRAM U37 (WRTTP). WRTTP writes a binary record on any specified tape. The FORTRAN II reference statement is CALL WRTTP (K, L, N).

a. Inputs. The inputs are the arguments K, L, and N. K defines the first address of the information, L the last address, and N the address containing the tape unit number.

b. Outputs. The outputs are the binary record on the specified tape or the setting of the error indicator SW(70) and the redundancy indicator SW(123). The following written and printed statements are also outputs:

a. END OF TAPE, RELOAD TAPE UNIT ____

b. ERROR WRITING TAPE ____

c. Program Logic. FD U37

(1) Steps 1-3. The contents of the index registers are saved. The channel (A or B) of the tape to be written is determined and the input/output instructions are initialized accordingly. The tape unit number is stored in the printout statements.

(2) Steps 4-5. The channel commands are set to the first and second addresses of data to be written. These two words are written and a checksum is accumulated.

(3) Steps 6-7. The channel command address is updated by one. If all words have been written, control is transferred to step 10, otherwise the subprogram continues at

the next step.

(4) Steps 8-9. If the end-of-tape has been reached, control is transferred to step 32, otherwise the next word is written and added to the checksum. Control is transferred to step 6.

(5) Steps 10-11. The accumulated checksum is written and the tape redundancy indicator is tested. If ØFF, control is transferred to step 18, otherwise the subprogram continues at the next step.

(6) Steps 12-15. The number of attempts to write the record are updated by one. If there has not been three attempts, the tape is backspaced and control is transferred to step 4. After the third attempt, U08 prints and writes statement b.

(7) Steps 16-17. The redundancy indicator SW(123) is set ØN, ITYER is set equal to 8, and control is transferred to step 36.

(8) Steps 18-21. The tape is backspaced over the record just written. The first two words are read and a checksum is accumulated. The remainder of the record is read and a checksum is accumulated.

(9) Steps 22-24. If the tape redundancy indicator is ØFF and the checksum written on the tape agrees with the checksum accumulated from reading and with the checksum

accumulated when writing, control is transferred to step 37. Otherwise the subprogram continues at the next step.

(10) Steps 25-28. The number of attempts to read the record are increased by one. If this is the first time that the record has been written and there have been 10 attempts to read the record, control is transferred to step 4, otherwise control is transferred to step 18. If this is the second time that the record has been written and there has been 10 attempts to read the record, the subprogram continues at the next step, otherwise control is transferred to step 18.

(11) Steps 29-31. U08 prints and writes statement b. If this was a redundancy error, control is transferred to step 16. Otherwise a one is stored in ITYER and control is transferred to step 36.

(12) Steps 32-35. The tape is backspaced over the record just written and three end-of-file marks are written on the tape. U08 prints statement a and a 10 is stored in ITYER.

(13) Step 36. The error indicator SW(70) is set ØN.

(14) Step 37. The contents of the index registers are restored. The subprogram exits to the user subprogram.

2-143. B2 SUBPROGRAMS.

2-144. The subprograms described in this area perform the input card and SENSE switch interpretations.

2-145. Subprogram L01 (BENTRY) enables the loader to establish linkage between the B1 and B2 subprograms. This version of BENTRY will be in core when the DOC control subprogram is to be established. The return path to the user subprogram is saved by SAVE4 and DØCNT is called. DØCNT may then pass control to the BENTRY which is required for a particular type TTP run, the proper BENTRY being established in core prior to the transfer of control. The subprograms are as follows:

a.	BENTRY	**L01	Establish B2 Control Area
b.	DØCTAA	U24	TAA Control Card Interpretation
c.	DØCSIM	U25	SIM Control Card Interpretation
d.	DØCTYP	U21	DOC Control Card Interpretation
e.	IDTTYP	U42	Process IDT Cards
f.	ØTC2	P04	TGT and MET Data Input Cards
g.	ØTCTØT	U22	OTC-TOT Control Card Interpretation
h.	PRTINT	U18	Set Direct Print Switch
i.	PRTSSW	U12	Print Switch Settings on Line
j.	RESCD	U17	Restart Card Interpretation

k. TGTTYP U27 TGT Data Card Interpretation

** Subprogram description is in the introductory paragraph of this area.

2-146. SUBPROGRAM U24 (DØCTAA). DØCTAA interprets the TAA control card. In conjunction with U41, DØCTAA converts the two azimuth limits to floating point binary; in conjunction with PRTINT, it determines if delayed or direct output is requested. The FORTRAN II reference statement is CALL DØCTAA.

a. Inputs. The input is a DOC-TAA control card in BCD form in the card image area. Figure 2-1 illustrates the format of the TAA card. The table in paragraph 2-209 illustrates the bit configuration of the columns in the card image area CDIO-CDI9.

b. Outputs. The outputs are the two converted launch azimuth limits duplexed in the GTAA array, and the settings of IFLAG, ITYER, and SW(32).

c. Program Logic. FD U24

(1) Steps 1-5. The contents of index registers 1, 2, and 4 are saved. IFLAG is set to identification integer 2124. U41 converts the first azimuth limit (columns 19-26) from BCD to floating binary, and SENSE light 4 is tested to determine if an error occurred in conversion (SENSE light 4 ØN). If ON, SENSE light 4 is set back ON; if OFF, the first azimuth limit is stored in duplexed form in the GTAA array.

(2) Steps 6-12. U41 converts the second azimuth limit (columns 27-34) from BCD to binary, and SENSE light 4 is tested to determine if an error occurred in conversion (SENSE light 4 ON). If ON, SENSE light 4 is set back ON; if OFF, the

second azimuth limit is stored in duplexed form in the GTAA array. PRTINT determines the type of printout requested, and SENSE light 4 is tested to determine if any errors occurred in conversion (SENSE light 4 ON). If ON, there are columns in error, a four is stored in ITYER and SW(70) is set ØN. If OFF, and no columns are in error, index registers are restored, and the subprogram returns to the user subprogram.

2-147. SUBPROGRAM U25 (DØCSIM). DØCSIM interprets the type of simulation requested and sets the appropriate switches. The FORTRAN II reference statement is CALL DØCSIM.

a. Inputs. The input is a DOC-SIM control card in BCD form in the card image area CDIO-CDI9. Figure 2-1 illustrates the format of this card and the table in paragraph 2-209 illustrates the bit configuration of the CDI registers.

b. Outputs. The outputs are the settings of the following switches:

COMMON TAG	ITEM (Switch in ØN state)
SW(86)	Closed loop simulation requested
SW(87)	Ballistic phase simulation requested
SW(88)	Re-entry phase simulation requested
SW(89)	Ideal-earth simulation requested
SW(90)	Series simulation requested
SW(135)	Open loop option in CLØØP

c. Program Logic. FD U25

(1) Steps 1-6. The contents of index registers 1, 2, and 4 are saved. IFLAG is set to identification integer 2125. The error work area register GRASE(3) is initialized to zero. SW(86) is initialized in step 11 to be set ØN or

ØFF, and column 24 (in CDI3) is positioned for checking. Step 13 is modified to continue at step 14.

(2) Steps 7-13. The column positioned for checking is examined for an N or Y indicating either that phase of simulation is not desired or that phase is desired. If an N is present, the previously initialized switch is set ØFF; if a Y is present, the switch is set ØN. SW(86), SW(87), SW(88), SW(89), SW(90), or SW(135) is set ØN or ØFF accordingly. If neither is present, the column is in error and is indicated in GRASE(3) by setting to 1 the bit corresponding to the column being examined. Control is transferred to step 14, 16, 18, 21, 23, or 25.

(3) Steps 14-15. SW(87) is initialized to be set and column 30 in CDI4 is positioned for checking. Step 13 is modified to continue at step 16 and the subprogram continues at step 7.

(4) Steps 16-17. SW(88) is initialized to be set and column 36 in CDI5 is positioned for checking. Step 13 is modified to continue at step 18 and the subprogram continues at step 7.

(5) Steps 18-20. GRASE(3) is stored in CLEL (if no errors have occurred, this register will contain zeros). GRASE(3) is reset to zero. SW(89) is initialized to be set and column 42 in CDI6 is positioned for checking. Step 13

is modified to continue at step 21 and the subprogram continues at step 7.

(6) Steps 21-22. SW(90) is initialized to be set and column 48 in CDI7 is positioned for checking. Step 13 is modified to continue at step 23 and the subprogram continues at step 7.

(7) Steps 23-24. SW(135) is initialized to be set and column 54 in CDI8 is positioned for checking. Step 13 is modified to continue at step 25 and the subprogram continues at step 7.

(8) Steps 25-29. GRASE(3) is stored in CLER, which contains zeros if no errors have occurred. The direct print switch is set by PRTINT. If any errors were indicated in CLEL or CLER (these registers would not contain all zeros), the error indicator SW(70) is set ØN and a four is stored in the type of error indicator ITYER. The contents of the index registers are restored and the subprogram exits to the user subprogram.

2-148. SUBPROGRAM U21 (DØCTYP). DØCTYP determines the type of DOC control card present and sets the appropriate switches. The FORTRAN II reference statement is CALL DØCTYP.

a. Inputs. The inputs are card columns 1-36 of the DOC control card in the card image area CDIO-CDI5. Columns 1-6 appear as follows:

DOC TYPE	CARD COLUMNS 1 2 3 4 5 6
RLTAP (radar/launch tape)	R L T A P
MTTAP (missile/trajectory tape)	M T T A P
INTAP (Input tape)	I N T A P

Columns 13-16 appear as follows:

DOC TYPE	CARD COLUMNS 13 14 15 16
OTC (Offset Target Computations)	O T C
TOT (Output Data Verification)	T O T
RSD (Range Safety Data)	R S D
TAA (Target Accessibility Area Determination)	T A A
SIM (Special Flight Simulation)	S I M
DEC (Decimal Correction)	D E C

Figure 2-1 illustrates the formats of these cards. The bit configuration of these columns in CDIO and CDI2 is as follows:

Bit Position Occupied	S-5	6-11	12-17	18-23	24-29	30-35
Column (CDIO)	1	2	3	4	5	6
Column (CDI2)	13	14	15	16	17	18

b. Outputs.

(1) The output is the setting of the DOC control switches in the Common Area. The switch corresponding to the DOC card type is set ØN; all others are set ØFF.

DOC TYPE	CORRESPONDING CONTROL TYPE SWITCH
RLTAP	SW(18)
MTTAP	SW(171)
INTAP	SW(173)
OTC	SW(75)
TOT	SW(76)
RSD	SW(78)
TAA	SW(77)
SIM	SW(79)
DEC	SW(80)

(2) Error indicator switch SW(70) is set ØFF unless an illegal DOC control card occurs, whereupon it is set ØN, ITYER is set to four, and the proper bits for the columns in error are stored in CLEL.

c. Program Logic. FD U21

(1) Steps 1-2. The contents of the index registers

are saved, IFLAG is set to identification integer 2121, and SW(70) is set ØFF.

(2) Steps 3-13. Columns 2-6 are tested to determine if a tape is to be processed. If the column contains RLTAP, initialization is made for radar/launcher tape identification, SW(18) is set ØN, and SW(171) and SW(173) are set ØFF. If the columns contain MTTAP, initialization is made for missile trajectory tape identification, SW(171) is set ØN, and SW(18) and SW(173) are set ØFF. If the columns contain INTAP, control is transferred to step 23. If neither is indicated, SW(18), SW(171), and SW(173) are set ØFF and control is transferred to step 33. Columns 13-18 are examined to determine if a new tape is to be produced (PROD-Y in columns 13-18). If it is, control is transferred to step 14. If the columns contain PROD-N, control is transferred to step 18. If neither is indicated, columns 13-18 are indicated in CLEL and control is transferred to step 31.

(3) Steps 14-17. SW(183) and SW(184) are set ØFF to indicate that a new tape is to be produced. In producing a new tape, updating is not possible. If updating is requested (Y in column 27) or if column 27 does not contain N, the column is indicated in CLEL and control is transferred to step 31. Otherwise control is transferred to step 30.

(4) Steps 18-22. A new tape is not to be produced, and if column 27 contains neither Y nor N, the column is

indicated in CLEL and control is transferred to step 31. If an old tape is to be updated (Y in column 27), SW(183) is set ØN, SW(184) is set ØFF, and control is transferred to step 30. If no updating is requested (N in column 27) and a list is requested (Y in column 34) SW(184) is set ØN, and the subprogram continues at step 30. Otherwise column 27 is indicated in CLEL and control is transferred to step 31.

(5) Steps 23-30. Initialization is made for input tape identification. SW(173) is set ØN, and SW(18) and SW(171) are set ØFF. If a new tape is to be produced (PROD-Y in columns 13-18), SW(183) and SW(184) are set ØFF, and control is transferred to step 30. If columns 13-18 contain PROD-N and column 25 contains Y (list required), SW(184) is set ØN. SW(75)-SW(80) are set ØFF and control is transferred to step 32. An error occurs when columns 13-18 contain other than PROD-Y or PROD-N, or when column 25 contains other than Y. In either case the columns are indicated in CLEL and the subprogram continues at step 31.

(6) Step 31. ITYER is set to four and SW(70) is set ØN.

(7) Step 32. The contents of the index registers are restored and the subprogram returns to the user subprogram.

(8) Steps 33-35. Columns 13-15 are compared against the program stored DOC control card types (OTC, TOT, RSD, TAA, SIM, and DEC). The subprogram sets each control card

type switch ØFF until an equal comparison results, at which time the corresponding switch is set ØN, all remaining switches are set ØFF. If an equal comparison does not result columns 12-15 are indicated in CLEL and control is transferred to step 31. Otherwise control is transferred to step 32.

2-149. SUBPROGRAM U42 (IDTTYP). IDTTYP determines and processes the type of identification (IDT) card read into core. The FORTRAN II reference statement is CALL IDTTYP.

a. Inputs. The inputs are either a SITE or LMCOM IDT card in the card image area CDIO-CDI9, and the following switches:

COMMON TAG	ITEM
SW(77)	TAA mode of operation
SW(79)	MSS mode of operation

b. Outputs. The outputs are as follows:

COMMON TAG	DIMENSION	ITEM
AIPR-64	1	Count of different LMCOM cards excluding DUMMY and SAME AS cards
CLEL	1	Erroneous card columns indicator
GCMØD	20	Missile identification
GCAZL	30	Azimuth limits identification
GCDM	30	Delta matrix identification
GCMC	20	Missile constants identification
GCHPD	30	Launcher identification
GCRDR	4	Radar Identification

The following printed and written statement is also output:

SITE CARD IS NOT FIRST IDT CARD

c. Program Logic. FD U42

(1) The identifications are stored in the first ten registers of each block and the first register of GCRDR.

(2) Steps 1-2. The index registers are saved and IFLAG is set to identification integer 2142.

(3) Steps 3-10. If the present card is not the first IDT card encountered, control is transferred to step 11. Otherwise, the counter for the number of different identifications is set to zero. If the card is a SITE card, step 3 is modified to continue at step 11 and control is transferred to step 48. If the present card is not a SITE card, U08 prints and writes the error statement and control is transferred to step 40.

(4) Steps 11-13. If the present card is not an LMCØM card, the corresponding bits in CLEL are set for the columns in error and control is transferred to step 40. If this is an LMCØM card and the operation is in either the TAA or MSS mode, (SW(77) = ØN or SW(79) = ØN), the output registers are initialized for target slot one. Control is transferred to step 22. Otherwise, the subprogram continues at the next step.

(5) Steps 14-18. The target number is tested for validity (1-9 or S). If the target number is S or invalid, it is changed to 10 so the identification information will be stored in the output registers corresponding to the last target slot. If the target is invalid, bit 15 in CLEL is

set to one. In all cases the target number counter is then decreased by one so that the corresponding output register can be address modified.

(6) Steps 19-21. If this is a DUMMY LMCØM card, the output registers GCDM, GCAZL, GCMC, GCHPD, and GCMØD corresponding to this target slot are set to contain the Hollerith DUMMY b and control is transferred to step 39. If this is a SAME AS LMCØM card, the subprogram continues at step 43.

(7) Steps 22-24. The launcher number is stored in GCAZL corresponding to this target slot. If it is not a valid digit (1, 2, or 3), bit 24 in CLEL is set to one.

(8) Steps 25-27. The launcher complex is stored in GCAZL and GCHPD corresponding to this target slot. If it is not a valid letter (A, B, or C), bit 14 in CLEL is set to one.

(9) Steps 28-34. If this is a new azimuth limits identity, the count of the number of different azimuth limits identification is increased by one. If this is a new missile model number, the count of the number of different missile model number identifications is increased by one.

(10) Steps 35-38. The missile model number is inserted in GCMØD corresponding to this target slot and tested for all digits. If it is non-numeric, bits 31-33 in CLEL are set to one. The missile model number is stored in GCDM corresponding to this target slot.

(11) Step 39. The card column error indicator, CLEL, is tested, if CLEL is zero, control is transferred to step 39, otherwise subprogram continues at the next step.

(12) Steps 40-41. ITYER is set to four and SW(70) is set ØN.

(13) Step 42. The index registers are restored and the subprogram exits to the user subprogram.

(14) Steps 43-47. The SAME AS target number is tested for validity (1-9 or S). If the SAME AS target number is invalid, bit 26 in CLEL is set to one and the subprogram continues at step 40. If the SAME AS target number is an S it is changed to ten. In all cases, the counter for the SAME AS target number is decreased by one so the output registers corresponding to this SAME AS target slot can be address modified. The data in GCMC, GCDM, GCAZL, GCMC, GCHPD, and GCMØD corresponding to the SAME AS target slot is also stored in the corresponding output registers for this target slot. The subprogram continues at step 39.

(15) Steps 48-55. If the squadron designation is invalid (other than all integers), bits 17-19 in CLEL are set to one. If the complex designation is invalid (other than A, B, or C), bit 26 in CLEL is set to one and the subprogram continues at step 40. CLEL is tested to determine if any card errors have been detected (CLEL $\neq$ 0). If a card error has been detected, the subprogram continues at step 40. If no card errors were detected, the squadron designation, with trailing zeros, is stored in GCDM, GCMC, and GCHPD for all 10 target slots. The squadron and complex designations are inserted in GCAZL for all 10 target slots. The squadron and complex designations with trailing blanks are stored in GCRDR. The subprogram then continues at step 42.

2-150. SUBPROGRAM PO4 (ØTC2). ØTC2 controls the target and MET data input. The FORTRAN II reference statement is CALL ØTC2.

a. Inputs. The input is the KIT card.

b. Outputs. The outputs are as follows:

COMMON TAG	DIMENSION	ITEM
INSTR1	1	Initializer for STRWND
INSTR2	1	Initializer for STRWND
SW(120)		U08 output mode indicator
ITYER	1	Error type indicator
SW(125)		CDCHK target card indicator

c. Program Logic. FD PO4

(1) Steps 1-4. INSTR1 and INSTR2 are initialized to zero. The KIT card is read on cards or on tape depending on the setting of SENSE switch 5. If ON, the data is read from cards; if OFF, the data is read from tape. If the card is verified as a KIT card the subprogram continues at step 5. Otherwise the subprogram continues at step 37.

(2) Steps 5-31. The next card is read. IFLAG is set to identification integer 1650. INTRØG interrogates SW(70) to determine if an error has occurred in reading (SW(70) = ØN). If ØN, the subprogram continues at step 36. If ØFF, SW(120) is set ØFF and U08 writes the last card or record that was read. IFLAG is set to identification integer 1650.

INTRØG interrogates SW(70) to determine if an error has occurred in writing (SW(70) = ØN). If ØN, the subprogram continues at step 36. If ØFF, CDTYPE determines the type of control card and IFLAG is set to identification integer 1650. INTRØG interrogates SW(70) to determine if an error has occurred in determining the type of control card (SW(70) = ØN). If ØN, the subprogram continues at step 36. If ØFF, INTRØG interrogates SW(116) to determine if a REM card is indicated (SW(116) = ØN). If ØN, the subprogram continues at step 5. If ØFF, INTRØG interrogates SW(114) to determine if a TGT card is indicated (SW(114) = ØN). If ØN, the subprogram continues at step 32. If ØFF, INTRØG interrogates SW(112) to determine if a MET card is indicated (SW(112) = ØN). If ØFF, a four is stored in ITYER and the subprogram continues at step 36. If ØN, SW(125) is set ØN. CDCHK verifies that TGT cards for the function requested have been processed. INTRØG interrogates SW(70) to determine if an error has been indicated by verification (SW(70) = ØN). If ØN, the subprogram continues at step 36. If ØFF, METDTA sets up meteorological input data requested by MET control cards. INTRØG interrogates SW(70) to determine if an error has occurred in reading (SW(70) = ØN). If ØN, the subprogram continues at step 36. If ØFF, control is returned to the user subprogram.

(3) Steps 32-35. TGTTYP converts the target data to floating point binary form. IFLAG is set to identification integer 1650. INTRØG interrogates SW(70) to determine if an

error has occurred in conversion (SW(70) = ØN). If ØN, the subprogram continues at step 36. If ØFF, the subprogram continues at step 5.

(4) Step 36. ERRPRT determines the type of error that has occurred and prints and writes the appropriate statement.

(5) Steps 37-38. The KIT card contents is stored in the card image area. A four is stored in ITYER and the subprogram continues at step 36.

2-151. SUBPROGRAM U22 (ØTCTØT). ØTCTØT initializes the target switches ØN or ØFF. The FORTRAN II reference statement is CALL ØTCTØT.

a. Inputs. The input is an OTC control card or a TOT control card in BCD form stored in the card image area. Figure 2-1 illustrates the formats of these cards. The table in paragraph 2-209 illustrates the bit configuration of the columns in the card image area. If the input is an OTC control card, SW(75) is ØN; if a TOT control card, SW(76) is ØN.

b. Outputs. The target switches SW(91)-SW(100) are set ØN to indicate the target slots for which the offset target aim point is to be determined or ØFF if no target aim point is desired for the particular target slot. If the input is an OTC control card, the new or old target tape indicator SW(83) is set ØN if a new tape is to be generated and ØFF if the old tape is to be modified.

c. Program Logic. FD U22

(1) Steps 1-2. The contents of index registers 1, 2, and 4 are saved. SW(91)-SW(100), SW(83), SW(172), SW(82), and SW(85) are initialized to zero. IFLAG is set to identification integer 2122.

(2) Steps 3-8. INTRØG interrogates SW(75) to determine if the input is an OTC control card (SW(75) = ØN).

If ØN, control is transferred to step 11. If ØFF, INTRØG interrogates SW(76) to determine if the input is a TOT control card (SW(76) = ØN). If ØN, control is transferred to step 16. If ØFF, a six is stored in ITYER (to designate a machine error) and the contents of index registers 1 and 2 are restored.

(3) Step 9. The error indicator SW(70) is set ØN.

(4) Step 10. The contents of index register 4 are restored and the subprogram exits to the user subprogram.

(5) Steps 11-15. Columns 19-21 are examined. If they contain the word NEW, SW(83) is set ØN. If they contain the word OLD, SW(83) is set ØFF. If neither NEW nor OLD appears, the columns are indicated to be in error by setting to one the proper bits in CLEL.

(6) Step 16. Column 33 (corresponding to the first target slot) is examined for a Y or an N. If a Y, the target switch SW(91) which corresponds to this target number is set ØN. If an N, SW(91) is set ØFF. If neither Y nor N appears, the column is in error and is indicated in CLEL. Columns 34 and 35 are processed in the same manner and the corresponding switches SW(92)-SW(93) are set accordingly.

(7) Steps 17-23. Columns 37-39 and 41-42 are extracted from register CDI6 and column 43 from CDI7. These columns represent target numbers 4-9 and are combined to form one

word. Each column is processed in the same manner as described in step 16, and the corresponding target switches, SW(94)-SW(99), are set accordingly. Any column in error is indicated in CLER. Column 45 (target number 10) is also processed in the same manner and SW(100) set accordingly. An error in this column is indicated in CLER.

(8) Steps 24-27. PRTINT determines if data is to be printed and sets the indicator. The contents of index registers 1 and 2 are restored. CLEL and CLER are examined and, if any column had been in error, a four (designating a card error) is stored in ITYER, and control is transferred to step 9. If no errors occurred, control is transferred to step 10.