point altitude adjustment due to fuzing quantization and 25g point detection time adjustment factor τ for the duplicate targets are equal to those of the original targets, GRASE(7) is set to plus one; otherwise GRASE(7) is set to minus one. The subprogram continues at step 12.

(2) Step 12. CUTIE is stepped by one.

(3) Steps 13-14. Set SW(ISLØT + 200) to SW(152). RTRN4 returns subprogram along path saved in step 1.

(4) Steps 15-22. INTRØG interrogates SW(76) to determine if the target from old tape is in the TOT mode (SW(76) = ØFF). If ØFF, and if all the T constants from the old tape area for duplicate targets are equal to those of the original targets, T25 from old tape area for duplicate targets equal to one of the output fuzing parameters for the original targets, T23 and T24 from old tape area for duplicate targets equal to detonation point altitude adjustment due to fuzing quantization and 25g point detection time adjustment factor τ of the original targets, respectively, and T20-T23 from old tape area for duplicate targets equal to output aim point bias vectors T1-T3 for the original targets, respectively, GRASE(7) is set to plus two; otherwise GRASE(7) is set to minus two, and the subprogram continues at step 12. If ØFF, the subprogram continues at step 23.

(5) Steps 23-30. SETUP sets up and duplexes working registers with the desired detonation point parameters for

each target. U04 reads the binary Common Area record, and INTRØG interrogates SW(70) to determine if an error occurred in U04 (SW(70) = ØN). If ØN, IFLAG is set to identification integer 2104, ERRPRT prints a notification of error, and the subprogram returns to the user subprogram. If ØFF, G constants are processed by GCONST and T constants are established.

(6) Steps 31-39. Switches are set as follows: SW(8), SW(20), and SW(21) ØN and SW(9) ØFF. If this run is for a Nike Zeus shot, SW(32) is set ØFF to stop processing at the detonation altitude. Otherwise, SW(32) is set ØN for normal processing. Additional switches are set as follows: SW(41), SW(47), SW(62), and SW(64) ØN and SW(43), SW(44), SW(50), SW(54), SW(55), SW(67), SW(68), and SW(133) ØFF. INITAL initializes data tables for flight simulation. The following switches are set ØN: SW(131), SW(132), SW(160), and SW(159). SWAP controls time sharing of subprograms in core, and inputs are initialized for XYZGEØ.

(7) Steps 40-45. XYZGEØ converts the position vector, expressed in the inertial earth-centered rectangular coordinate system, into geocentric latitude, longitude, and altitude form. LCTØLG computes the geographic latitude for the current target. The differences between the geocentric latitude, longitude, and altitude and the output aim point bias vector for the current target are computed. The difference between the absolute value of the longitude deviation of the current target from a point west of Greenwich and 180° is tested with zero. If equal, the subprogram continues at

step 47. If less, the subprogram continues at step 48. If greater, and the longitude deviation of the current target from a point west of Greenwich is equal to or greater than zero, the subprogram continues at step 46. Otherwise, the longitude deviation of the current target from a point west of Greenwich is subtracted from 360, and the subprogram continues at step 48.

(8) Step 46. The longitude deviation of the current target from a point west of Greenwich is decreased by 360, and the subprogram continues at step 48.

(9) Step 47. The sign of the current target geographic longitude is transferred to the longitude of a point west of Greenwich.

(10) Steps 48-50. The difference between the absolute value of geographic longitude of current target and longitude of point west of Greenwich and 360 is examined. If less than zero, the subprogram continues at step 52. Otherwise, the difference between the geographic longitude of current target and longitude of point west of Greenwich is examined. If equal to zero, the subprogram continues at step 52. If greater than zero, the subprogram continues at step 51. If less than zero, 360 is added to the difference between the geographic longitude of current target and longitude of point west of Greenwich, and the subprogram continues at step 52.

(11) Step 51. The difference between the geographic

longitude of the current target and longitude of points west of Greenwich is decreased by 360.

(12) Steps 52-58. The value r^2 is computed by use of expressions (1), (2), (3), and (4). The difference between the square of the maximum allowable miss distance of final flight and r^2 is computed. If greater than r^2, the subprogram continues at step 58. Otherwise SW(152) is set ØN. Output statement a is written and printed. IFLAG is set to identification integer 1642.

(13) Steps 59-66. IDCOMP compares the ID data of the current target. IFLAG is set to identification integer 1642. INTROG interrogates SW(51). If ØFF, no disagreement exists with TDI or DGZ and the subprogram continues at step 70. Otherwise, disagreement exists and SW(152) is set ØN. Statement b is written and printed. KØUNT is set to 3 in order to test for all exceeded constraints. The launch azimuth is set from T8 to be checked for constraints.

(14) Steps 67-72. CNSTRN checks for exceeded constraints. IFLAG is set to identification integer 1642. INTRØG interrogates SW(151) to determine if constraint has been exceeded in the last simulation of this target (SW(151) = ØN). If ØN, statement c is written and printed. If ØFF, the subprogram continues at step 73. Check point is initialized.

(15) Steps 73-76. INGAIN establishes AGAIN for use in CKPTCK. CKPTCK establishes the check point. GRASE is set

equal to the north, east, and altitude components. GRASE(7) is set to zero and the subprogram continues at step 12.

d. Expressions.

$$E = (\lambda_T - \lambda_p') r_T \cos L_{CT} \quad (1)$$

$$N = (L_{cp} - L_{CT}) r_T \quad (2)$$

$$A = h_p' - B \quad (3)$$

where

$$B = G_{STC} + h_C + h_{DD}$$

$$r^2 = E^2 + N^2 \quad (4)$$

2-171. B4 SUBPROGRAMS.

2-172. The subprograms described in this area generate the three parts of the target kit, i.e., target tape, IBM equivalent of the R/V cards, and printout of T-constants.

2-173. Subprogram L03 (BENTRY) enables the loader to establish linkage between the B1 and B4 subprograms. This version of BENTRY will be in core only when the OPC mode of operation is requested. The return path of the user subprogram is saved by SAVE4 and ØPCNT is called. After OPC has been completed, the subprogram exits to DØCNT through RTRN4.

a.	BENTRY	**L03	Establish B4 Control Area
b.	KITPRP	U69	
c.	KITPRT	U70	Target Kit Printout
d.	ØPCNT	U43	Target Kit Output Control
e.	PRØDRV	U60	Generate IBM R/V Card Images
f.	SUB1	U57	Scaled Octal to RRU Word Format
g.	TARGTP	U65	Generate ~~Mylar Tape Cards~~ Magnetic Target Tape
h.	TARKI	U58	Floating Decimal to Scaled Octal

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

 mod F2

2-174. SUBPROGRAM U69 (KITPRP). KITPRP prepares dates and input data identification for the target kit printout. Reference to U69 is made by FORTRAN II statement CALL KITPRP(I).

a. Inputs. The inputs are I, which determines the pass being made, and the following:

COMMON TAG	DIMENSION	ITEM
GCAZL	30	Azimuth limits identification and date - one to ten targets.
GCRDR	7	Radar identification and five dates
GCHPD	30	Launcher identification and dates - one to ten targets
UPDAT	1	Targeting tape production date
UEDAT	1	Targeting tape effective date
GCDM	30	Delta matrix identification and date - one to ten targets
GCMPD	20	Missile identification and date - one to ten targets
GCMC	20	M constant identification and date - one to ten targets
TOID	10	Target data inventory number - one to ten targets
UKITR	50,1	Designated ground zero
TOGZ	10	Designated ground zero
TODA	20	Detonation altitude above target
ITAMP	1	Trajectory, atmosphere, and missile parameter for targeting kit printout

b. Outputs. The outputs are USPAR which contains the complex, ISQDN which contains the squadron, a table for the first pass, and a table for the second pass. The tables are located in GRASE Common Area. They are defined in KITPRP by tag AKIT for the first pass, and BKIT for the second pass. The tables are as follows:

COMMON TAG	DIMENSION	ITEM
AKIT	1,1	Squadron and complex of launcher
AKIT	1,2	MGC TGT SELECT
AKIT	1,3	TDI number
AKIT	1,4	SDL DGZ
AKIT	1,5	Coded DGZ
AKIT	1,6	Burst A-air; G-ground
AKIT	1,7	Tamp number
AKIT	1,8	The items for AKIT(1,8) through AKIT(1, 63) consist of sets of seven for the remaining targets analegous to AKIT(1,1) through AKIT(1,7) for the first target. For a dummy target the squadron number is zero
AKIT	1,71	MLSDS squadron and complex
AKIT	1,72	MLSDS squadron and complex
AKIT	1,73	MLSDS squadron and complex
AKIT	1,74	MLSDS date
.	.	. .
.	.	. .
AKIT	1,79	MLSDS date
AKIT	1,88	Radar dates
.	.	. .
.	.	. .
AKIT	1,95	Radar dates
AKIT	1,96	Effective date
AKIT	1,97	Effective date

COMMON TAG	DIMENSION	ITEM
AKIT	1,98	BCD words used for printout in KITPRT; BCD BLANK, BCD 3's, etc.
.	.	.
.	.	.
AKIT	1,105	BCD words used for printout in KITPRT; BCD BLANK, BCD 3's, etc.
BKIT	1,1	Day of launcher date
.	.	.
.	.	.
BKIT	1,10	Day of launcher date
BKIT	1,11	Day of missile model date
.	.	.
.	.	.
BKIT	1,20	Day of missile model date
BKIT	1,21	Day of delta matrix date
.	.	.
.	.	.
BKIT	1,30	Day of delta matrix date
BKIT	1,31	Day of azimuth limits date
.	.	.
.	.	.
BKIT	1,40	Day of azimuth limits date
BKIT	1,41	Day of M constant date
.	.	.
.	.	.
BKIT	1,50	Day of M constant date
BKIT	1,51	Squadron and complex of launcher
.	.	.
.	.	.
BKIT	1,60	Squadron and complex of launcher
BKIT	1,61	Delta matrix model number
.	.	.
.	.	.
BKIT	1,70	Delta matrix model number

COMMON TAG	DIMENSION	ITEM
BKIT	1,71	Squadron and complex of azimuth limits
.	.	.
.	.	.
BKIT	1,80	Squadron and complex of azimuth limits
BKIT	1,81	Radar dates
.	.	.
.	.	.
BKIT	1,88	Radar dates
BKIT	1,89	Squadron and complex of radar
BKIT	1,90	BCD words for use by KITPRT (standard, etc.)
.	.	.
.	.	.
BKIT	1,96	BCD words for use by KITPRT (standard, etc.)

c. Program Logic. FD U69

(1) Steps 1-2. The contents of index registers 1, 2, and 4 are saved. Input argument is examined to determine whether first pass or second pass is to be made. Control is transferred to step 19 for the second pass; the subprogram continues at the next step for the first pass.

(2) Steps 3-7. Data for target kit identity sheet are set up and launchers put in order. Launcher, MGC TGT SELECT, TDI, SDL, DGZ, coded DGZ, burst (A or G), and TAMP number are set up for each target. Except for the MGC TGT SELECT number, zeros are stored for DUMMY targets.

(3) Steps 8-17. Each complex (A, B, and C) is examined. MLSDS survey data and radar data are set up for each complex present. Blanks for complexes not used are inserted. Effective date, squadron, complex, and supplementary words are stored for use by KITPRT.

(4) Step 18. The contents of the index registers are restored and the subprogram exits to the user subprogram.

(5) Steps 19-27. Dates, model, complex, and squadron numbers for input data used in printout are set up. Control is transferred to step 18.

2-175. SUBPROGRAM U70 (KITPRT). KITPRT writes the target KIT printout on tape A7 for delayed printing. The FORTRAN II reference statement is CALL KITPRT.

a. Inputs. The inputs are as follows:

COMMON TAG	ITEM
RDRUM(190-330)	Supplementary flight information for each target.
UPTID(1)	Control number in BCD
ISQDN	Squadron number in BCD
USPAR(1)	Complex letter in BCD
GRASE(1-150)	Data setup by KITPRP
AIPR(50-59)	Climatology data
AIPR(75-80)	Kit card information
UMDAT	Climatology date
TOID	Target data inventory number
TODA	Detonation altitude above target
TOGZ	Desired ground zero
OCAZL	Azimuth limits identification and date
OCHPD	Launcher identification and date
OCMOD	Missile identification and date
OCDM	Delta matrix identification and date
OCMC	M constant identification and date
RSLTS	T constants for each target
IDPTG	Duplicate target slot number storage
RSUP	Supplementary flight information for each target

COMMON TAG	ITEM
SW(141-150)	Target slot data same as IDPTG slot from old tape
SW(161-170)	R/V card switches
XGI	G constants
XM	M constants
FRTOD	Conversion constant radians to degrees
FCGR	Mass conversion factor

b. Output. The output is the target kit printout written for delayed printing. Figure 2- illustrates this printout.

c. Program Logic. FD U70

(1) Steps 1-6. All ten targets are examined to determine if any are duplicate targets (IDPTG does not equal zero and SW(141-150) = ØFF). The corresponding target identifications are set up for any such duplicate targets. KITPRP prepares the data for the first five pages of the target kit printout and stores the BCD words in the GRASE area. The data from GRASE is transferred to the work area AKIT.

(2) Step 7. The supplementary flight information is prepared for printout by converting look angle and elevation angle at VECO from radians to degrees and by converting fuel and LOX at VECO from slugs to pounds.

(3) Steps 8-20. The information for the target kit identity sheet, page 1, is prepared and printed.

(4) Steps 21-35. The information for the guidance tape information sheet, page 2, is prepared and printed.

(5) Steps 36-43. The information for the target tape contents sheet, page 3, is prepared and printed.

(6) Steps 44-51. The information for the re-entry vehicle card sheet, page 4, is prepared and printed.

(7) Steps 52-57. The information for the launch control label sheet, page 5, is prepared and printed.

(8) Steps 58-59. KITPRP prepares the model numbers, squadron, complex and dates of the input data used for printout and stores this data in GRASE. The data is transferred from GRASE to the work area AKIT.

(9) Steps 60-63. If the target is a DUMMY or a SAME AS, blanks are inserted in the input data used area.

(10) Steps 64-66. The T constants and input data used information for the ten sectors are printed, pages 1, 3, 5, and 7 of the targeting summary printout.

(11) Steps 67-69. The supplementary flight information for the ten sectors are printed, pages 2, 4, 6, and 8 of the targeting summary printout.

(12) Steps 70-72. The G and M constants are printed, page 9 of the targeting summary printout. The subprogram exits to the user subprogram.

680012 31 DEC 61 724-A

724 A1	01	11111	AA	001	A	680801
724 A2	04	22222	AA	001	A	680801
724 A3	07	33333	AA	001	G	680801
724 B1	02	44444	AA	001	G	680802
724 B2	05	55555	AA	001	G	680802
724 B3	08	66666	AA	001	A	680802
724 C1	03	77777	AA	001	G	680801
724 C2	06	88888	AA	001	G	680801
724 C3	09	99999	AA	001	A	680801

01 FEB TO 01 JUN

724 A	15 JAN 61
724 B	15 MAR 61
724 C	15 APR 61
	15 AUG 61
	15 SEP 61
	15 MAY 61
	15 JUL 61

Figure 2-4 Printout Format (Sheet 1 of 8)

680012 724-A

09 NØV 61

BN 2005

AB

29 MAY 61

AB

680012 31 DEC 61

-0000001

+0000001

Figure 2-4 Printout Format (Sheet 2 of 8)

680012 724-A

680012 31 DEC 61

1014

33333333	33333333	33333333
+0000001	+0000002	+0000003
+0680012	+0680012	+0680012
+0011111	+0044444	+0077777
+0000001	+0000001	+0000001
33333333	33333333	33333333
+0000004	+0000005	+0000006
+0680012	+0680012	+0680012
+0022222	+0055555	+0088888
+0000001	+0000001	+0000001
33333333	33333333	33333333
+0000007	+0000008	+0000009
+0680012	+0680012	+0680012
+0033333	+0066666	+0099999
+0000001	+0000001	+0000001
33333303		
+0000010		
+0680012		
+0000000		
+0000000		

Figure 2-4 Printout Format (Sheet 3 of 8)

680012 724-A

3

11111-001 680012	NØT USED	NØT USED
22222-001 680012	NØT USED	NØT USED
33333-001 680012	NØT USED	NØT USED

WWW.CHROMEHOOVES.NET

Figure 2-4 Printout Format (Sheet 4 of 8)

WWW.CHROMEHOOVES.NET

CONFIDENTIAL

680012 724-A

3

11111 001

NØT USED

NØT USED

22222 001

NØT USED

NØT USED

33333 001

NØT USED

NØT USED

Figure 2-4 Printout Format (Sheet 5 of 8)

		680012		724-A
			T-CØNSTANTS	
	SECTØR	1	2	3
T1	FT	20939217.	0.	0.
T2	DEG	20.379509	0.	0.
T3	DEG	-63.38593	0.	0.
T4	NM	91.480	0.	0.
T5	NM	-320.613	0.	0.
T6	SEC-NM/FT	0.177562	0.	0.
T7	SEC-NM/FT	-0.192654	0.	0.
T8	QUANTA	2340.432	0.	0.
T9	DEG	4.251360	0.	0.
T10	SEC	2292.9795	0.	0.
T11	DEG	-85.13865	0.	0.
T12	DEG	22.970735	0.	0.
T13	FT/SEC	111.221	0.	0.
T14	FT/SEC	11.233	0.	0.
T15	NØT USED			
T16	NØT USED			
T17	TDI	23456	000	00000
T18	DGZ	001	000	000
T19	FLAG	0.	-1.	-1.
T20	CØMP NO	01		
T21	CØNT NO	680012		

INPUT DATA USED

	MOD	FOR	DATE	MOD	FOR	DATE	MOD	FOR	DATE
LAUNCHER(MLSDS)		724-A	13JAN62		724-B	14JAN62		724-C	26JAN62
AZMTH CØØRDINATE(A)		724-A	15AUG61		724-A	15AUG61		724-A	15AUG61
AZMTH CØØRDINATE(B)		724-A	15AUG61		724-A	15AUG61		724-A	15AUG61
RANGE CØØRDINATE(A)		724-A	15AUG61		724-A	15AUG61		724-A	15AUG61
RANGE CØØRDINATE(B)		724-A	15AUG61		724-A	15AUG61		724-A	15AUG61
MISSILE MØDEL	001		15NØV61	002		16NØV61	002		16NØV61
DELTA MATRIX	001	724	20DEC61	002	724	20DEC61	002	724	20DEC61
AZMTH LIMITS		724-A1	15JAN62		724-B	11JUN61		724-C	13MAY62
M-CØNSTANTS		724	30DEC61		724	30DEC61		724	30DEC61
MET DATA	01	MAY TØ	01 JUN		STANDARD			STANDARD	

NOTE

T constants 1-18 are all zeros for DUMMY targets. Targets 4-10 have same format as above.

Figure 2-4 Printout Format (Sheet 6 of 8)

680012 724-A

M-CØNSTANTS			G-CØNSTANTS		
M1	NØT USED		G1	NUMERIC	0.8211173
M2	FT/SEC	7913.574	G2	NUMERIC	0.5707595
M3	FT/SEC-CYC	3.325682	G3	FT	11876543.
M4	CYCLES	475.1037	G4	FT	12345678.
M5	CYCLES	111.9326	G5	RAD	-0.12345678
M6	FT/SEC	9625.068	G6	RAD	-0.12345678
M7	FT/SEC-CYC	-11.99016	G7	NUMERIC	0.8193628
M8	CYCLES	475.1037	G8	NUMERIC	-0.5763281
M9	CYCLES	151.1628	G9	ARU	-5146028
M10	FT/SEC	5764.240	G10	ARU	10324600
M11	FT/SEC-CYC	13.12345	G11	NØT USED	
M12	CYCLES	475.1234	G12	DRU	30676
M13	CYCLES	242.1234	G13	ARU	-5146035
M14	FT/SEC	8703.123	G14	ARU	10324600
M15	FT/SEC-CYC	1.123456	G15	DRU	30676
M16	CYCLES	474.1234	G16	QUANTA	2774.989
M17	CYCLES	347.1234			
M18	FT/SEC	4010.123			
M19	FT/SEC-CYC	0.			
M20	CYCLES	2108.123			
M21	CYCLES	363.1234			
M22	FT/SEC	10101.12			
M23	FT/SEC-CYC	0.			
M24	CYCLES	853.1234			
M25	CYCLES	253.1234			
M26	CYCLES	317.1234			
M27	CYCLES	355.1234			
M28	CYCLES	381.1234			
M29	RAD/CYC	-0.00428598			
M30	RAD/CYC	-0.00147863			
M31	FT/SEC	0.			
M32	FT/SEC	0.366000			
M33	FT/SEC	-0.057500			
M34	FT/SEC	341.0500			
M35	FT/SEC	0.			

Figure 2-4 Printout Format (Sheet 7 of 8)

680012 724-A

SUPPLEMENTARY FLIGHT INFØRMATIØN

SECTØR	1	2	3
BECØ			
LAT-DEG	35.000632	0.	0.
LØN-DEG	124.98628	0.	0.
RANGE-MI	97.6387	0.	0.
TIME-SEC	115.08763	0.	0.
BØØST IMPACT			
LAT-DEG	35.014229	0.	0.
LON-DEG	125.13316	0.	0.
RANGE-MI	198.1164	0.	0.
SECØ			
LAT-DEG	35.113228	0.	0.
LØN-DEG	128.12345	0.	0.
RANGE-MI	295.6732	0.	0.
TIME-SEC	205.65432	0.	0.
VECØ			
LAT-DEG	35.112168	0.	0.
LØN-DEG	130.08444	0.	0.
RANGE-MI	398.9086	0.	0.
TIME-SEC	348.73160	0.	0.
LØØK ANG-DEG	8.762214	0.	0.
FUEL-LBS	535.6420	0.	0.
LØX-LBS	1062.8079	0.	0.
RADAR ELEV-DEG	22.433451	0.	0.
APØGEE			
RANGE-MI	1963.1234	0.	0.
TIME-SEC	2068.01624	0.	0.
ALTITUDE-FT	2586732.1	0.	0.
RE-ENTRY			
LAT-DEG	21.463721	0.	0.
LØN-DEG	191.96832	0.	0.
TIME-SEC	1581.3342	0.	0.
ANGLE-DEG	-24.765042	0.	0.
VELØCITY-FT/SEC	22062.776	0.	0.
IMPACT			
LAT-DEG	20.410907	0.	0.
LØN-DEG	193.56929	0.	0.
RANGE-MI	3567.5894	0.	0.
TIME-SEC	1639.2252	0.	0.

NOTE

Supplementary data is all zeros for DUMMY targets. Targets 4-10 have same format as above.

Figure 2-4 Printout Format (Sheet 8 of 8)

2-176. SUBPROGRAM U43 (ØPCNT). ØPCNT produces the three parts of the target kit, i.e., target tape, IBM equivalent of R/V cards, and printouts of T constants. The FORTRAN II reference statement is CALL ØPCNT.

a. Inputs. No inputs are defined.

b. Outputs. No outputs are defined.

c. Program Logic. FD U43. PRØDRV establishes a code and generates the IBM R/V cards. TARGTP generates the magnetic target tape and KITPRT generates the target kit printout. The subprogram returns to the user subprogram.

 mod F2

2-177. SUBPROGRAM U60 (PRØDRV). PRØDRV converts the output fuzing parameters to the decimal equivalents and uses this information along with the inventory number and desired ground zero to generate the IBM equivalent of the R/V cards on tape B5. The FORTRAN II reference statement is CALL PRØDRV.

a. Inputs. The inputs are as follows:

COMMON TAG	DIMENSION	ITEM	UNITS
IRFSG	2,1,10	Output fuzing parameter for all 10 targets	integer
TOID	10,1	Target data inventory number	BCD
TOGZ	10,1	Desired ground zero - numeric alphabetic	BCD
UBLUE	24,1	IBM card image area for missile one	
UWITE	24,1	IBM card image area for missile two	
UYELØ	24,1	IBM card image area for missile three	
SW(91)-SW(100)		If ØFF, denotes dummy target	
SW(101)-SW(110)		If ØN, denotes hand-over target	
SW(161)-SW(170)		If ØN, punch target OGE card	

b. Outputs. The outputs are the IBM equivalent of the R/V cards written on tape B5 as illustrated in figure 2-3 and the following Common registers:

COMMON TAG	DIMENSION	ITEM	UNITS
IFLAG	1	Identification integer	
ITYER	1	Error type indicator	integer
SW(70)	1	If ØN, error occurred	
GRASE	1	Temporary storage register	
FRASE	116	IBM equivalent of R/V card image area	

The following statement is also an output:

ERROR WRITING TAPE B5.

c. Program Logic.

(1) Steps 1-4. The contents of the index registers are saved and SW(70) is set ØFF. Target codes for the fuzing parameters are determined using two algorithms and the subprogram continues at step 5.

(2) Steps 5-10. The duplexed fuzing parameter codes for the first (next) target are compared for agreement. If they do not agree, IFLAG is set to identification integer 2160, SW(70) is set ØN, ITYER is set to 11, and ERRPRT prints and writes a notification of machine error. If the fuzing codes agree for the first (next) target, the subprogram continues at step 5 until all target fuzing codes have been compared for agreement. The card image areas UBLUE, UWITE, and UYELØ are transferred to the FRASE array and the subprogram continues at step 11.

(3) Steps 11-14. The units and tens value of the 1st,

4th, 7th, or 10th target fuzing code are stored in the card image area, columns 2-9, rows 2 and 3. The units value of the 2nd, 5th, 8th, or 11th target fuzing code is stored in the card image area, columns 20-23, rows 2 and 3 and the tens value in columns 37-40, rows 2 and 3. The units and tens value of the 3rd, 6th, 9th, or 12th target fuzing code are stored in the card image area, columns 51-58, rows 2 and 3. If all target fuzing codes have not been stored, the subprogram continues at step 11 to set up the next card image area. Otherwise the subprogram continues at step 15.

(4) Steps 15-20. The target data inventory number and desired ground zero are masked into the label field of the card image area, columns 12-16 and columns 43-47. If three passes have not been made, the subprogram continues at step 15 until the label field is complete for three targets. If four passes have not been made the subprogram continues at step 15 until the label field is completed for four target card image areas. A yellow shape coding punch is added to the fourth target card image area and shape coding punches are removed from targets 11 and 12. The lower registration punch is removed from targets 11 and 12 and all other unnecessary information is removed from the fourth card image area. The subprogram continues at step 20.

(5) Step 21. SW(91), SW(92), . . . , or SW(100) is tested to determine if target 1, 2, . . . , or 10 is a dummy

target. If ØFP, the target is a dummy and the subprogram continues at step 22. Otherwise the subprogram continues at step 23.

(6) Step 22. The first, second, or third target in the card image area is cleared and the subprogram continues at step 24.

(7) Step 23. SW(161), SW(162), .. , or SW(170) is tested. If ON, the target card is to be punched and the subprogram continues at step 24. Otherwise the subprogram continues at step 22.

(8) Steps 24-25. If all targets and target switches have not been tested, the subprogram continues at step 21. Otherwise tape B5 is rewound and the subprogram continues at step 26.

(9) Step 26. The first (next) R/V card image is set up from left and right card rows to tape columns.

(10) Steps 27-28. The R/V card image is written on tape B5. If a tape redundancy occurs the subprogram continues at step 29; otherwise control is transferred to step 31.

(11) Steps 29-30. If three attempts have been made to write the record, U08 prints and writes the output statement and the subprogram exits to HALT for manual intervention. Otherwise the record is backspaced and control is

transferred to step 27.

(12) Steps 31-37. Tape B5 is backspaced one record and the record just written is read. If a tape redundancy occurs control is transferred to step 29. Otherwise the record is compared with the record previously written. If the two records do not agree control is transferred to step 29. If all four R/V card images have not been written on tape B5 control is transferred to step 26. Otherwise an end-of-file mark is written on tape B5 and the tape is rewound. The contents of the index registers are restored and the subprogram returns to the user subprogram.

2-178. SUBPROGRAM U57 (SUB1). SUB1 sets up the RRU drum address and the instructions containing the T, M, and G constants into a block. The FORTRAN II reference statement is CALL SUB1. The FAP reference instruction is TSX SUB1, 4.

a. Inputs. The inputs are as follows:

COMMON TAG	ITEM	UNITS
JPØNT	Counter	integer
GRASE(12)	RRU drum address	
GRASE(14)	Constant scaled for RRU computer	
GRASE(8)	Block number	
GRASE(5)	Character control	
XDEW	Block of constants	
GRASE(10)	RDRUM word	

b. Outputs. The outputs are as follows:

COMMON TAG	ITEM	UNITS
XDEW	Block of magnetic tape constants	

c. Program Logic. FD U57. The contents of the index registers are saved. The RRU drum address is stored in groups of three bits each in five successive locations S1, S2, . . . S5. The RRU code 05_8 is added to S1. The first 12 bits of the RRU scaled constants are stored in groups of three bits in four successive locations S8, S9, S10, S11. The remaining 12 bits are stored in groups of three bits in four successive locations S14, S15, S16, S17. If constant T16 is being processed (JPØNT = 2) locations S6, S7, S12, and S13 are set to zero. Otherwise the magnitude of the first three bits of the RDRUM word is tested. If one or three, SM55 is set to SM5; if two, SM55 is set to SM6; S6 and S12 are set to 13_8, S7 to 20_8, and S13 to 40_8. The XDEW array is masked with locations S1-S17 to form the block of constants for magnetic tape. The index registers are restored and the subprogram returns to the user subprogram.

 mod F2

2-179. SUBPROGRAM U65 (TARGTP). TARGTP writes the magnetic target tape from which the plastic tape is generated on the digitronics DIO5. The FORTRAN II reference statement is CALL TARGTP.

a. Inputs. The inputs are as follows:

COMMON TAG	DIMENSION	ITEM	UNITS
ICØNT	1	Control number for target Kit	integer
UPDAT	1	Target tape production data	
UTDIN	10,1	Target data inventory number	integer
IDGZP	10,1	Desired ground zero point	integer
ICØMP	1	Compatability information	integer
USPAR	14,1	Spare block	
RDRUM	330	Drum slot address and scaling factors to appear on output paper tape	
RSLTS	2,19,10	Matrix-Output data for all 10 targets	
XM	2,35	Matrix of M constants	
XGI	2,16	Matrix of G constants	

b. Outputs. The outputs are as follows:

COMMON TAG	DIMENSION	ITEM	UNITS
ITYER	1	Error type indicator	integer
IFLAG	1	Identification integer	integer