STEP	PROCEDURE
12	TARGET A (launchers 1, 2 and 3)..... Red The target A indicators for all three launchers will light red when R/V card holders are opened.
13	R/V cards..... Removed Remove the previously installed R/V cards and return to appropriate target kit.
14	R/V cards..... Inserted Insert the new R/V Cards for A R/V card holders, launchers 1, 2 and 3.
15	Close PUSH TO CLOSE..... Locked
16	TARGET indicators..... Green Applicable target indicators should be green at this time.
	LAUNCH CONTROL CONSOLE
17	TARGET SELECTION panel..... Opened Open TARGET SELECTION panel by unlocking with key and pulling the top of the panel.
18	Console labels..... Removed Remove previously installed launch control console labels and return to appropriate target kit.
19	Console labels..... Installed New launch control console labels will be installed in order given on launch control label sheet.
20	Close TARGET SELECTION panel..... Locked Note Check each target by performing steps 22 and 23 in conjunction with step 21.

Fig. 3-22. R/V Cards and Launch Console Label Installation Procedure (Sheet 3 of 4)

STEP	PROCEDURE
21	TARGET SELECTION (all targets)..... Green As the TARGET SELECTION PULL TO TURN switch is moved to each position, check that TARGET SELECT indicators light green for each launcher and target. LAUNCH COMPLEX FACILITIES CONSOLE
22	RE-ENTRY VEHICLE..... Red, Then Not Lighted As the TARGET SELECTION PULL TO TURN switch is moved from one target to the other, the RE-ENTRY VEHICLE indicator on LCFC for the appropriate launcher will light red momentarily. If all R/V cards have identical settings, the RE-ENTRY VEHICLE indicators will not light red as the TARGET SELECTION PULL TO TURN switches are positioned from A thru C. However, the RE-ENTRY VEHICLE indicators will light red as the TARGET SELECTION PULL TO TURN switches are positioned from C thru A. TARGET CARD READER AND LOGIC ASSEMBLIES
23	Selected R/V card holders..... Lighted The R/V card holder will light for the target selected. Check appropriate R/V card holder for a lighted condition after each movement of PULL TO TURN switch. LAUNCH CONTROL CONSOLE Note After completion of R/V card and launch console label verification, return TARGET SELECTION switches to proper position for alert status monitoring.

Fig. 3-22. R/V Cards and Launch Console Label Installation Procedure (Sheet 4 of 4)

STEP	PROCEDURE
	Verify that figure 3-19 has been accomplished.
	MISSILE GUIDANCE CONSOLE
1	ANT LOWER..... Green T.O. 31X7-2-1-151 T.O. 21-SM68-2J-7-1-1
2	Press SELECT TARGET 1..... Green
3	Press TARGET VERIFY..... White Target verify will turn white then green after printout is complete.
4	TARGET VERIFY..... Green TARGET VERIFY will remain white for not valid targets and TEST FAULT will light yellow. TEST FAULT may be cleared by pressing GUIDE X NOT RDY and HOLD RELEASE pushbuttons.
5	Printout..... Checked Digital data printer printout must be identical to printout on target tape contents sheet in guidance control target trajectory kit folder under MGC TGT SELECT.
6	Repeat steps 2 thru 5 for targets 2 thru 10..... Accomplished
7	Press POWER OFF..... White
8	Printout..... Stored Remove printout from digital data printer Date, initial, and store printout in guidance control target trajectory kit folder.

Figure 3-23. Verify Target Procedure

STEP	PROCEDURE
	Handover target kit identification sheets.
1	Guidance control target trajectory kit folder..... Checked T.O. Not Required GEO will check the folder for the following items: a. 1 target kit identification sheet b. 1 guidance computer tape information sheet c. 1 target tape contents sheet
2	Launch control target trajectory kit folder..... Checked GEO will check the folder for the following items: a. 1 target kit identification sheet b. Re-entry vehicle cards sheet c. Launch control console lable sheet
3	Compatibility..... Checked Check that all handover target kit identification sheets are compatible with target kit identification sheets as to control number, effective date, and all targeting information. A compatibility check of handover targets is required. Check control number of handover material with appropriate sites. Any between-complex discrepancies must be noted and resolved with the TMCO. A handover oountdown shall not be performed unless handover targets are compatible.

Figure 3-24. Handover Target Compatibility Procedure

STEP	PROCEDURE	
	Check that targeting package contains guidance program tape, target tape, and guidance control target kit folder.	
	MISSILE GUIDANCE CONSOLE	
1	STBY..... T.O. 21-SM68-2J-7-1-1 T.O. 31X7-2-1-151	Green
2	ANTENNA A or B FACILITY MAINT.....	Green
3	ANTENNA A or B FACILITY SELECT (as applicable).....	Green
4	HANDOVER OFF.....	Green
	The GEO checks the missile guidance console to insure that the above indications are displayed prior to pressing POWER ON.	
5	Press POWER ON.....	White
	TAPE READER 2	
6	LOAD.....	Pressed
7	POWER ON.....	Pressed
8	POWER indicator.....	White
9	LOAD indicator.....	Yellow
10	BULB ON.....	Amber
11	Guidance tape.....	Mounted and Threaded
	Manually wind tape until all conductive leader is on take up reel and beginning of program data is at reverse capstan.	
12	Control Arms at null point.....	Positioned
13	STAND BY.....	Pressed
14	STAND BY indicator.....	Blue
15	REMOTE.....	Pressed

Figure 3-25. Fast Retargeting, Install and Verify Target Tape and Verify Guidance Program Tape Procedure (Sheet 1 of 5)

STEP	PROCEDURE	
16	REMOTE indicator.....	Green
	TAPE READER 1	
17	LOAD.....	Pressed
18	POWER ON.....	Pressed
19	POWER indicator.....	White
20	LOAD indicator.....	Yellow
21	BULB ON.....	Amber
22	Target tape.....	Mounted and Threaded
	Manually wind tape until all conductive leader is on take-up reel and beginning of program data is at reverse capstan.	
23	Control arms at null point.....	Positioned
24	STAND BY.....	Pressed
25	STAND BY indicator.....	Blue
26	REMOTE.....	Pressed
27	REMOTE indicator.....	Green
	MISSILE GUIDANCE CONSOLE	
28	POWER ON.....	Green
	POWER ON indicator will light green in approximately 2 minutes and 30 seconds after pressing POWER ON pushbutton indicator.	
29	Press MAINT.....	Yellow
	COMPUTER SET CONSOLE	
30	POWER ON.....	Green
31	MAINT.....	White
32	Press HOLD MAINT.....	Amber

Figure 3-25. Fast Retargeting, Install and Verify Target Tape and Verify Guidance Program Tape Procedure (Sheet 2 of 5)

STEP	PROCEDURE
33	Press NORMAL RATE..... Green
34	EXECUTE PROGRAM..... White
35	STEP/STOP..... Amber
36	READY..... White
37	TARGET REF..... White
38	Target TAPE BLOCK NUMBER..... Set
	The target TAPE BLOCK NUMBER is listed on the Target tape contents sheet.
39	Press LOAD PROGRAM..... White
40	Press TAPE READER 1..... White
41	Press READY..... White
42	Press RUN..... Green
	TAPE READER 1
43	Target tape movement..... Checked
	The target tape moves forward, and stops near end of tape.
	COMPUTER SET CONSOLE
44	TAPE READER CONTROL STOP..... Lighted
45	TAPE FAULT indicators..... Not Lighted
	Targeting data is now loaded on magnetic drum.
46	RUN..... Not Lighted
47	STEP/STOP..... Amber
48	Press VERIFY PROGRAM..... White
49	Press READY..... White
50	Press RUN..... Green

Figure 3-25. Fast Retargeting, Install and Verify Target Tape and Verify Guidance Program Tape Procedure (Sheet 3 of 5)

STEP	PROCEDURE
	TAPE READER 1
51	Target tape movement..... Checked
	The Target Tape rewinds, moves forward, then stops.
	COMPUTER SET CONSOLE
52	TAPE FAULT indicators..... Not Lighted
53	TAPE READER CONTROL STOP..... Lighted
54	RUN..... Not Lighted
55	STEP/STOP..... Amber
56	Guidance program TAPE BLOCK NUMBER..... Set
	The Guidance Program TAPE BLOCK NUMBER is listed on the Guidance computer tape information sheet.
57	Press TAPE READER 2..... White
58	Press READY..... White
59	Press FORWARD 1..... Lighted
60	Press RUN..... Green
	TAPE READER 2
61	Guidance tape movement..... Checked
	The guidance tape moves forward and stops near end of tape.
62	TAPE READER CONTROL STOP..... Lighted
63	TAPE FAULT..... Not Lighted
64	RUN..... Not Lighted
65	STEP/STOP..... Amber
	The target tape is now loaded and verified; the guidance tape has been verified.

Figure 3-25. Fast Retargeting, Install and Verify Target Tape and Verify Guidance Program Tape Procedure (Sheet 4 of 5)

STEP	PROCEDURE
	TAPE READER 1 and TAPE READER 2
66	POWER OFF..... Pressed
	POWER OFF pushbutton is pressed at this time. Fast retargeting verify target procedures will be performed at this time, and when time is available the tapes will be rewound, removed from the tape reader, and stored in accordance with post targeting procedures.
67	All indicators..... Not Lighted
	COMPUTER SET CONSOLE
68	Press HOLD MAINT..... Not Lighted
69	MAINT..... White
70	Press READY..... White
	MISSILE GUIDANCE CONSOLE
71	Press STBY..... Green
	Guidance computer is now in an operational state of readiness.

Figure 3-25. Fast Retargeting, Install and Verify Target Tape and Verify Guidance Program Tape Procedure (Sheet 5 of 5)

STEP	PROCEDURE
	Verify that Figure 3-21 has been accomplished.
	MISSILE GUIDANCE CONSOLE
1	ANT LOWER..... Green T.O. 31X7-2-1-151 Target verify may be performed with ANT RAISE green if HANDOVER ON is yellow.
2	Press SELECT TARGET 1..... Green
3	Press TARGET VERIFY..... White TARGET VERIFY will light white, then green after printout is complete.
4	TARGET VERIFY..... Green TARGET VERIFY will remain white for non-valid targets and TEST FAULT will light yellow. TEST FAULT may be cleared by pressing GUID X NOT RDY and HOLD RELEASE.
5	Printout..... Checked Digital data printout must be identical to printout on target tape contents sheet in guidance control target trajectory kit folder under MGC TGT SELECT.
6	Repeat steps 2 thru 5 for SELECT TARGETS 2 thru 10..... Accomplished
7	Printout..... Removed, Stored When time is available, date, initial, and store the digital data printout in the guidance control target trajectory kit folder.

Figure 3-26. Fast Retargeting Verify Target Procedure

STEP	PROCEDURE
	This procedure will be performed when time is available.
	TAPE READER 1 and TAPE READER 2
1	LOAD..... Pressed T.O. 31X7-2-1-151 T.O. 21-SM68-2J-7-1-1
2	POWER ON..... Pressed
3	POWER indicators..... White
4	LOAD indicators..... Yellow
5	Control arms at null point..... Positioned
	Position the control arms of TAPE READER 1 and perform steps 6 and 7; then position the control arms of TAPE READER 2 and perform steps 6 and 7.
6	STAND BY..... Pressed
7	STAND BY indicators..... Blue
8	REVERSE..... Pressed
9	REVERSE indicators..... White
10	Target tape and guidance tape..... Rewound
	The target and guidance tapes rewind and stop near end of tapes.
11	END OF TAPE..... Red
12	LOAD..... Pressed
	Press LOAD pushbutton on TAPE READER 1 when target tape has rewound. Then perform steps 13, 14, 15 and 16. When the guidance tape has rewound, press LOAD pushbutton on TAPE READER 2 and continue steps.
13	Control arms..... Locked
14	POWER OFF..... Pressed
15	All indicators..... Not Lighted

Figure 3-27. Fast Retargeting Post Retargeting Procedure (Sheet 1 of 2)

STEP	PROCEDURE
16	Target tape and guidance tape..... Removed and Stored
	MISSILE GUIDANCE CONSOLE
17	Press POWER OFF..... White

Figure 3-27. Fast Retargeting Post Retargeting Procedure (Sheet 2 of 2)

STEP	PROCEDURE
	Verify that the following materials are available:
	a. Target card reader and logic assemblies key.
	b. Target selection door panel key.
	c. Launch control target kit folder.
	d. Target cards and labels.
	TARGET CARD READER AND LOGIC ASSEMBLIES
1	LAMP VERIFY switches..... OFF T.O. 31X7-2-1-151
2	TARGET indicators (as applicable)..... Green
	LAUNCH CONTROL CONSOLE
	CAUTION Do not turn any TARGET SELECTION switch to a not used position. Failure to observe this caution may cause serious damage to the re-entry vehicle.
3	TARGET SELECTION LAUNCHER NO. 1, 2, and 3..... A
	Set all PULL TO TURN switches to position A.
	TARGET CARD READER AND LOGIC ASSEMBLIES
	CAUTION Do not open R/V holder if it is lighted. Failure to observe this caution may cause serious damage to the re-entry vehicle.
4	R/V card holder..... Opened
	Open only the unlighted R/V card holders by inserting key and unlocking.
5	TARGET indicators..... Red
	The target indicators will be red for corresponding open R/V card holders.
6	R/V CARDS..... Removed

Figure 3-28. Fast Retargeting R/V Card and Launch Console Label Installation Procedure (Sheet 1 of 4)

STEP	PROCEDURE
6 (CONT)	Remove the R/V cards from the open R/V card holders and return to appropriate target kit.
	CAUTION To avoid damaging the new R/V cards, insure that card holders are in the full open position.
7	R/V cards..... Inserted The R/V card or cards supplied for each launcher are to be inserted as designated on the re-entry vehicle card sheet. If any R/V cards within the same color group bear the same identification number, the order will be determined by inspecting the hold positions punched in the R/V card. Hole position H-1 is punched for target A, H-2 for target B, and H-3 for target C. The R/V cards are inserted with cut at lower left corner.
8	CLOSE PUSH TO CLOSE actuators..... Locked
9	TARGET indicators..... Green The target indicators for the R/V cards inserted must be green.
	LAUNCH CONTROL CONSOLE
	CAUTION Do not turn any TARGET SELECTION switch to a not used position. Failure to observe this caution may cause serious damage to the re-entry vehicle.
10	TARGET SELECTION LAUNCHER NO. 1, 2, and 3..... B Set all PULL TO TURN switches to target B.
	TARGET CARD READER AND LOGIC ASSEMBLIES
11	R/V Card holders A (launchers 1, 2, and 3)..... Opened The A R/V card holders will be opened by inserting key and unlocking.
12	TARGET A (launchers 1, 2, and 3)..... Red

Figure 3-28. Fast Retargeting R/V Card and Launch Console Label Installation Procedure (Sheet 2 of 4)

STEP	PROCEDURE
12 (CONT)	The target A indicators for all three launchers will light red when R/V card holders are opened.
13	R/V cards..... Removed
	Remove the previously installed R/V cards and return to appropriate target kit.
14	R/V cards..... Inserted
	Insert the new R/V cards for A R/V card holders, launchers 1, 2, and 3.
15	Close PUSH TO CLOSE actuators..... Locked
16	TARGET indicators..... Green
	Applicable target indicators should be green at this time.
	LAUNCH CONTROL CONSOLE
17	TARGET SELECTION panel..... Opened
	Open TARGET SELECTION panel by unlocking with key and pulling the top of the panel.
18	Console labels..... Removed
	Remove previously installed launch control console labels and return to appropriate target kit.
19	Console labels..... Installed
	New launch control console labels will be installed in order given on launch control label sheet.
20	Close TARGET SELECTION panel..... Locked
21	TARGET SELECTION panel (all targets)..... Green
	As the TARGET SELECTION PULL TO TURN switch is moved to each position, check that TARGET SELECT indicators light green for each launcher and target.
	LAUNCH COMPLEX FACILITIES CONSOLE
22	RE-ENTRY VEHICLE..... Red, then Not Lighted

Figure 3-28. Fast Retargeting R/V Card and Launch Console Label Installation Procedure (Sheet 3 of 4)

STEP	PROCEDURE
22 (CONT)	As the TARGET SELECTION PULL TO TURN switch is moved from one target to the other, the RE-ENTRY VEHICLE indicator on LCFC for the appropriate launcher will light red momentarily. If all R/V cards have identical settings, the RE-ENTRY VEHICLE indicators will not light red as the TARGET SELECTION PULL TO TURN switches are positioned from A thru C. However, the RE-ENTRY VEHICLE indicators will light red as the TARGET SELECTION PULL TO TURN switches are positioned from C thru A.
	TARGET CARD READER AND LOGIC ASSEMBLIES
23	Selected R/V card holder..... Lighted
	The R/V card holder will light for the target selected. Check appropriate R/V card holder for a lighted condition after each movement of PULL TO TURN switch.
	LAUNCH CONTROL CONSOLE
	NOTE After completion of R/V card and launch console label verification, return TARGET SELECTION switches to proper position for alert status monitoring.

Figure 3-28. Fast Retargeting R/V Card and Launch Console Label Installation Procedure (Sheet 4 of 4)

(Text continued from page 3-89))

3-100. MISSILE LAUNCH OFFICER. If not at launch control console when the alert is sounded, the MLO will report there as soon as possible and complete all actions required by applicable SAC and local fast reaction checklists.

3-101. GUIDANCE ELECTRONICS OFFICER. If not at the missile guidance console when the alert is sounded, the GEO will report there as soon as possible and complete all actions required by applicable SAC and local fast reaction checklists.

3-102. BALLISTIC MISSILE ANALYST TECHNICIAN. If not at the launch complex facilities console when the alert is sounded, the BMAT will report there as soon as possible and complete all actions required by applicable SAC and local fast reaction checklists.

3-103. MISSILE MAINTENANCE TECHNICIAN. If not in the control center when the alert is sounded, the MMT will report to the MLO as soon as possible for instructions. If the MMT is part of a maintenance team, he will react as briefed in the maintenance coordination briefing.

3-104. ELECTRICAL POWER PRODUCTION TECHNICIAN. When the alert sounds, one EPPT monitors the briefed communications net while the other EPPT starts the standby generator. If only one EPPT is in the power house, he will proceed immediately to the appropriate checklist, and start and parallel the standby generator.

3-105. FACILITY CREW MEMBERS. The facility crew members will immediately report to the EPPT for direction.

3-106. MAINTENANCE AND SERVICE PERSONNEL. The maintenance and service personnel will insure equipment is safe and returned to a launch configuration. Personnel will continue maintenance on out-of-commission missiles as briefed. All others will proceed immediately to maintenance ready room and standby for further instructions.

3-107. COMBAT DEFENSE FORCE. The combat defense force guards will assemble at the complex gate and await further instructions from the control center. They will be deployed in accordance with current existing directives.

3-108. TERMINATION OF ALERT. The MLO will announce the termination of an alert and inform all personnel to resume normal duties. The BMAT will reposition the above ground hazard light to indicate a safe condition. This indication will serve to notify the above ground guards of termination of the alert.

3-109. FAST REACTION MESSAGE.

3-110. A fast reaction message is transmitted to alert the MCC for EWO commitments. The requirement for immediate and undivided attention to fast reaction messages is mandatory. Members of the MCC who are required to copy fast reaction messages will cease all other activities and copy the message being transmitted, and will not divert their attention until the required actions have been completed. All fast reaction messages will be handled in accordance with SACM 55-18 and will be logged.

3-111. LAUNCH, EXERCISE, AND GUIDANCE COUNTDOWN PROCEDURES.

3-112. The launch, exercise, and guidance countdown procedures consist of capabilities for either an exercise or an actual EWO launch countdown operation. An exercise countdown will be accomplished as an EWO configuration with the exception of

imposed simulations present in the exercise mode. The countdown will commence upon receipt of a valid execution (actual or exercise) message and will progress from the load propellants phase through the end of guidance phase. Figure 3-29 is the procedure for EWO launch countdown and figure 3-30 is the procedure for an exercise countdown for the MLO/BMAT. Figure 3-31 is the procedure for guidance countdown.

WARNING

Prior to conducting an exercise, the liquid and gaseous oxygen detectors and analyzers must be in an operating condition in accordance with T.O. 21-SM68-CL-12-1, T.O. 21-SM68-CL-24-1, or T.O. 21-SM68-CL-27-1.

3-113. POWER HOUSE COUNTDOWN PROCEDURE.

3-114. The power house countdown procedure (figure 3-32) will be initiated upon receipt of ALERT signal.

3-115. LAUNCH COUNTDOWN SYSTEM FUNCTIONS.

3-116. The launch countdown system functions contain the sequence of all subsystems of the missile weapon system during EWO launch countdown. Figure 3-33 lists functions for operational bases, and figure 3-34 lists function for VAFB. Figure 3-35 lists launcher functions for all bases.

STEP	PROCEDURE
	The MLO and BMAT will announce all light indications as they occur on the LCC and LCFC.
	During combat training launches conducted at VAFB, the MLO must receive clearance from site commander/command post prior to initiation of each countdown phase.
1	Press HAZARD LIGHT (3)..... Flashing Red
	Upon receipt of an actual EWO execution message, the BMAT will press the three ABOVE GRD HAZARD LIGHT pushbutton indicators to flashing red for all launchers. For launches other than EWO, press ABOVE GRD HAZARD LIGHT pushbutton indicators to steady red.
2	Guidance and facility status..... Received
	MLO receives reports on equipment status from GEO and BMAT, insuring weapon system status is in an R-0 configuration.
3	Power house status..... Received
	MLO receives power house status report from EPPT with any restrictions or exceptions to normal EWO countdown procedures. The load propellants phase is not initiated until receipt of this report.
4	Press LOAD PROPELLANTS ____/ ____/ ____/..... White
	MLO presses LOAD PROPELLANTS pushbutton indicator on all three launchers. LOAD PROPELLANTS white indicates that the countdown has started.
	LOX LOADING indicators will light white, indicating rapid loading is in progress.
5	Go code..... Verified
	Verification of the go code is normally accomplished after initiating the load propellants phase and must be verified prior to the raise launcher phase.
6	Press EXERCISE____/ ____/ ____/ ..... Not Lighted
	Prior to initiation of the raise launcher phase during an actual launch, the MLO breaks the seals on the EXERCISE pushbutton covers and presses the pushbutton indicators to not lighted.

Figure 3-29. Launch Countdown Procedure (Sheet 1 of 5)

STEP	PROCEDURE
7	Launch enable system ENABLE..... Verified In an actual launch, the launch enable system is enabled prior to initiation of the raise launcher phase. The MLO checks for a green ENABLE on the time display board. LOX LOADED indicators will light white signifying missiles are loaded and topping is in effect.
8	RAISE LAUNCHER..... Green RAISE LAUNCHER green denotes that all prerequisites to raise launcher phase have been completed.
9	Guidance status..... Received The MLO must receive a "Guidance go" from the GEO before continuing countdown. Upon receipt of a "Guidance No-Go" the MLO will not proceed until a "Guidance go" is received and handover mode has been initiated as follows: a. Communications established with the remote ground guidance station (GGS). b. Target compatibility insured between local missiles and the remote GGS. c. Handover switch indicator on local LCC and remote GGS actuated. RAISE LAUNCHER will not be pressed until remote GGS reports, "Ready to guide." Ready to guide means ANT RAISED and guidance is ready to accept missile.
10	Select target (handover only)..... Directed Acknowledged (Perform after remote GGS antenna is raised.) MLO directs the GEO at the remote GGS to select proper target for missile to be launched. GEO acknowledges and verifies correct target selection.
11	Select launcher (handover only)..... Directed Acknowledged

Figure 3-29. Launch Countdown Procedure (Sheet 2 of 5)

STEP	PROCEDURE
11 (CONT)	MLO directs the GEO at the remote GGS to select the launcher being raised. GEO acknowledges and verifies correct launcher selected.
12	Ready to guide (handover only)..... Received Ready to guide means that the remote guidance station has raised antenna, selected applicable target and launcher, pressed ACQ MISSILE, and the antenna has been slewed to the preset coordinates and is standing by for lift off signal.
13	Press HANDOVER (handover only)..... White
14	Press RAISE LAUNCHER ____/ ____/ ____/..... White The RAISE LAUNCHER white indication denotes that the raise launcher phase is in progress. In addition, the following indications occur: a. (After incorporation of TCTO 31X3-10-27-511) FUEL VALVES OPEN white denotes that all fuel storage valves are open. b. (Prior to incorporation of TCTO 31X3-10-27-511) CRIB UMB DISC white denotes that the signal to retract the crib umbilical mechanism has been generated. c. TARGET SELECT white denotes lockup of target selection. d. MISSILE TANKS PRESSURIZED white denotes that missile lox, fuel, and helium tanks are pressurized.
15	LAUNCH..... Green LAUNCH green indicates that all launch prerequisites are complete.

Figure 3-29. Launch Countdown Procedure (Sheet 3 of 5)

STEP	PROCEDURE
16 (CONT)	Press LAUNCH ____/ ____/ ____/..... White MLO presses the LAUNCH pushbutton indicator from green to white for the applicable launcher. The LAUNCH pushbutton should be pressed as soon as possible after it indicates green. The maximum allowable hold time is 30 seconds. In addition, the following indications occur: a. POWER TRANSFERRED white indicates power has been transferred to the missile batteries. b. GUIDANCE LOCKED ON white indicates guidance is locked on and ready for start loop check. c. GROUND GUIDANCE white indicates that guidance is locked on the missile. d. LOOP CHECK COMPLETE white indicates that all guidance and flight control system loop checks are complete.
17	LIFT OFF..... White LIFT OFF white indicates the missile is released for flight. Note Repeat steps 9 thru 17 for remaining launchers when RAISE LAUNCHER lights green.
18	LOWER LAUNCHER..... Green LOWER LAUNCHER green denotes that the lower launcher phase can be initiated. Note Lowering the launcher is accomplished as soon as possible after all in-commission missiles have been launched during EWO execution.
19	Press LOWER LAUNCHER ____/ ____/ ____/..... White MLO verifies a lower launcher green indication and presses the LOWER LAUNCHER pushbutton to white.

Figure 3-29. Launch Countdown Procedure (Sheet 4 of 5)

STEP	PROCEDURE
19.1	Press HANDOVER (handover only). . . . . Not Lighted
20	LOWER LAUNCHER. . . . . Not Lighted
	Note Repeat steps 18 thru 20 for remaining launchers.
21	Return power house to alert status monitoring . . . . Directed MLO directs EPPT to return the power house to an alert status monitoring configuration.

Figure 3-29. Launch Countdown Procedure (Sheet 5 of 5)

STEP	PROCEDURE
	When shutdown occurs, refer to T.O. 21M-HGM25A-12CL-1, T.O. 21M-HGM25A-24CL-1, T.O. 21M-HGM25A-26CL-1, or T.O. 21M-HGM25A-27CL-1 for recycle procedures.
	The MLO and BMAT will announce all light indications as they occur on the LCC and LCFC applicable to the exercise. During exercises conducted at VAFB, the MLO must receive clearance from site commander/command post prior to initiation of each countdown phase.
	WARNING All liquid oxygen detectors and gaseous oxygen analyzers must be in an operating condition prior to conducting any lox exercise.
1	Initiate countdown order. . . . . Received Upon receipt of the appropriate countdown order, the launch crew will proceed with lox or combined systems exercise countdown.
2	HAZARD LIGHT DRY CSE . . . . . Green LOX CSE, lox only exercise, FUEL CSE, or (After incorporation of TCTO 31X3-10-11-634) FUEL EXERCISE. . . . . Flashing Red Upon receipt of the appropriate countdown order, the BMAT will press the ABOVE GRD HAZARD LIGHT pushbutton indicator for appropriate launcher to flashing red for LOX CSE, lox only exercise, FUEL CSE and (after incorporation of TCTO 31X3-10-11 -634) FUEL EXERCISE. For a DRY CSE the ABOVE GRD HAZARD LIGHT will be left in the green position.
3	Guidance and facility status. . . . . Received MLO receives report on equipment status from GEO and BMAT, insuring weapon system status is in an R-0 configuration.
4	Power house status. . . . . Received MLO receives power house status report from EPPT with any restrictions or exceptions to normal exercise countdown procedures. The load propellant phase is not initiated until receipt of this report.

Figure 3-30. Lox or CSE Countdown Procedure (Sheet 1 of 6)

STEP	PROCEDURE
5	EVENTS RECORDER (CSE) switch (10A8) . . . . . ON When required, MMT will set the CSE events recorder switch located on the launch mode control chassis (assembly 10A8) to ON.
6	Press LOAD PROPELLANTS. . . . . White MLO presses LOAD PROPELLANTS pushbutton indicator for the exercising launcher as directed. In addition, LOX LOADING indicator lights white signifying rapid loading is in progress.

Figure 3-30. Lox or CSE Countdown Procedure (Sheet 1A of 6)

STEP	PROCEDURE
7	Go code (simulated) . . . . . Verified Verification of the go code is normally accomplished after initiating the load propellants phase and must be verified prior to the raise launcher phase. This action is simulated for an exercise countdown.
8	EXERCISE. . . . . White Prior to initiation of the raise launcher phase during an exercise countdown, the MLO checks for EXERCISE white on the exercising launcher. This indication assures the MLO that the weapon system is operating in an exercise mode.
9	HANDOVER DRY CSE . . . . . White LOX CSE, lox only exercise, FUEL CSE, or (After incorporation of TCTO 31X3-10-11-634) FUEL EXERCISE. . . . . Not Lighted When performing DRY CSE, MLO presses HANDOVER pushbutton indicator (LCC) white to bypass guidance signals not required for a dry exercise countdown. In all other exercise modes of operation, HANDOVER will be left in the not lighted position.
10	Launch enable system DISABLE. . . . . Verified CAUTION If PLPS NO-GO is received at T-700, a manual shutdown must be initiated immediately to prevent lox overflow from missile vents. LOX LOADED indicator will light white and be announced by the MLO. This indication denotes that Stage I and II are at 100%, and that Stage I and II helium spheres are pressurized.
11	RAISE LAUNCHER. . . . . Green RAISE LAUNCHER green denotes that all prerequisites to raise launcher phase have been completed.

Figure 3-30. Lox or CSE Countdown Procedure (Sheet 2 of 6)

STEP	PROCEDURE
12	Guidance status . . . . . Received The MLO must receive a guidance go report from the GEO before proceeding with the countdown. Upon receipt of a guidance no-go, the MLO will initiate a hold or proceed with handover operations as follows: a. Communications established with the remote ground guidance station. b. Target compatibility insured between local missile and the remote ground guidance station. c. Handover pushbutton indicator on local LCC and remote ground guidance station actuated. RAISE LAUNCHER will not be pressed until remote ground guidance station reports, "Ready to guide". Note Tasks 13 through 16 are performed during LOX CSE, lox only exercise, FUEL CSE, and (After incorporation of TCTO 31X3-10-11-634) FUEL EXERCISE for handover only.
13	Select target . . . . . Directed, Acknowledged (Perform after remote GGS antenna is raised) MLO directs the GEO at the remote GGS to select proper target for the missile to be launched. GEO acknowledges and verifies correct target selected.
14	Select launcher . . . . . Directed, Acknowledged MLO directs the GEO at the remote GGS to select the launcher being raised. GEO acknowledges and verifies correct launcher selected.
15	Ready to guide. . . . . Received Ready to guide means that the remote GGS has raised antenna, selected applicable target and launcher, pressed the ACQ MISSILE pushbutton, the antenna has slewed to preset coordinates, and is standing by for the lift off signal.

Figure 3-30. Lox or CSE Countdown Procedure (Sheet 3 of 6)

STEP	PROCEDURE
16	Press HANDOVER.....White Handover white enables the countdown to continue without ground guidance.
17	Press RAISE LAUNCHER.....White MLO presses the RAISE LAUNCHER pushbutton indicator to white. The RAISE LAUNCHER white indication denotes that the raise launcher phase is in progress. (Prior to incorporation of TCTO 31X3-10-27-511). The CRIB UMB DISC indicator will light white denoting that the signal to retract the crib umbilical mechanism has been generated. (After incorporation of TCTO 31X3-10-27-511) The FUEL VALVES OPEN pushbutton indicator will light white denoting all fuel storage valves are open. The TARGET SELECT indicator will light white denoting lock-up of target selection. The MISSILE TANKS PRESS'D indicator will light white denoting that missile lox, fuel, and helium tanks are pressurized.
18	LAUNCH.....Green This indication denotes that all launch prerequisites are complete.
19	Analog recorder Lox exercise and dry CSE.....OFF Fuel and lox CSE.....ON When required, the MMT will turn on the analog recorder switch located on the 10A8 assembly.
20	Press LAUNCH.....White MLO presses the LAUNCH pushbutton from green to white for the applicable launcher. Staging reliability is substantially increased when LAUNCH pushbutton is pressed as soon as possible after it indicates green. LAUNCH white indicates that the launch phase has commenced. The POWER TRANSFERRED indicator will light white denoting that power has been transferred to missile batteries.

Figure 3-30. Lox or CSE Countdown Procedure (Sheet 4 of 6)

STEP	PROCEDURE
20 (CONT)	GUIDANCE LOCKED ON indicator will light white denoting that guidance is locked on and ready for start loop check. GROUND GUIDANCE indicator will light white denoting that guidance is locked on the missile. LOOP CHECK COMPLETE indicator will light white denoting that the guidance and flight controls system loop checks are complete and satisfactory. Note For a DRY CSE, lox only exercise, and (After incorporation of TCTO 31X3-10-11-634) FUEL EXERCISE the following indications should occur at T+7: SHUTDOWN red, GROUND POWER red, and EXERCISE green. If shut down does not occur by T+10, MLO will manually press SHUTDOWN (LCC).
21	LIFT OFF DRY CSE, lox only exercise, or (After incorporation of TCTO 31X3-10-11-634) FUEL EXERCISE . . . . . Not Lighted LOX CSE or FUEL CSE . . . . . White If LIFT OFF lights during DRY CSE, lox only exercise, or (After TCTO 31X3-10-11-634) FUEL EXERCISE, initiate manual shut down at T+10 seconds.
22	LOWER LAUNCHER. . . . . Green This indication denotes that the lower launcher phase may be initiated.
23	SHUTDOWN. . . . . Red During a LOX CSE and FUEL CSE, SHUTDOWN will occur at simulated nose cone release.
24	Analog recorder . . . . . OFF The MMT will turn off the analog recorder at completion of CSE.
25	Press LOWER LAUNCHER. . . . . White

Figure 3-30. Lox or CSE Countdown Procedure (Sheet 5 of 6)

STEP	PROCEDURE
25 (CONT)	Pressing the LOWER LAUNCHER pushbutton indicator initiates the lower launcher phase. The white indication denotes that the lower launcher phase is in progress.
25.1	Press HANDOVER. . . . . Not Lighted
26	LOWER LAUNCHER. . . . . Not Lighted This indication denotes that the lower launcher phase is complete.
27	Events recorder . . . . . OFF The MMT will turn off the events recorder at completion of CSE.
28	Return power house to alert status monitoring . . . . . Directed The MLO directs the EPPT to return the power house to an alert status monitoring configuration.
29	Press HAZARD LIGHT (if applicable). . . . . Amber The BMAT presses the ABOVE GRD HAZARD LIGHT to amber after completion of a LOX CSE, lox only exercise, and (After incorporation of TCTO 31X3 -10-11-634) FUEL EXERCISE. If a hazard indication is present the ABOVE GRD HAZARD LIGHT will be positioned in accordance with T.O. 21M-HGM25A-1 -1CL-4.
30	Post shutdown and unload procedure. . . . . Directed MLO directs the MMT to supervise post shutdown procedures for accomplishment of missile helium and lox unloading utilizing recycle procedures from appropriate functional checklists.
31	Missile helium and lox unloading. . . . . Completed MMT will report to the MLO when missile helium and lox unloading and recycle procedures are complete.

Figure 3-30. Lox or CSE Countdown Procedure (Sheet 6 of 6)