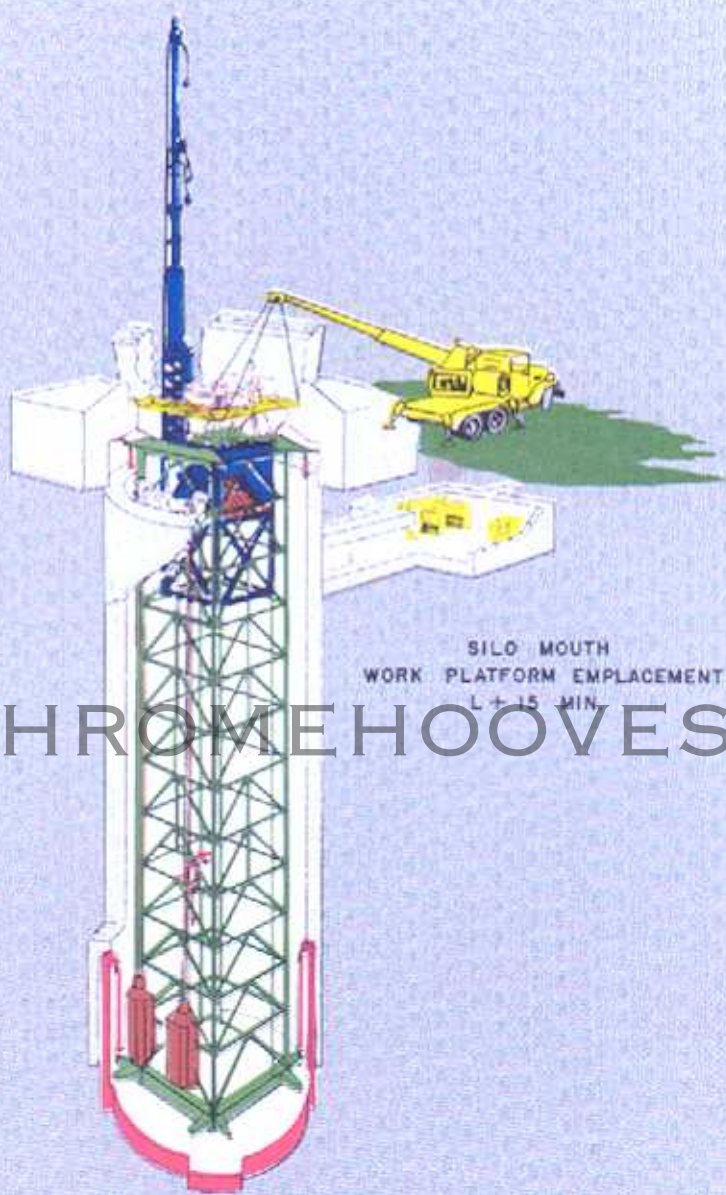


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SILO MOUTH
WORK PLATFORM EMPLACEMENT
L + 15 MIN.

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15. PREPARATION FOR STAGE EMPLACEMENT

35 minutes after beginning of loading cycle . . . Stage I prepared for loading . . . protective covers removed . . . adapters and slings attached . . . truck crane used for emplacement of Stage I . . . assembly of missile stages done at silo mouth safety grid . . . ease of communication extremely necessary for this operation . . . truck crane set on jack points to prevent sway or other undesirable movement . . .

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PREPARATION FOR STAGE EMBLACEMENT
L + 35 MIN.

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16. STAGE ERECTION

Stage I is lifted from transtainer . . . necessary slings, adapters and tag lines are used in conjunction with the truck crane . . . vertical erection on missile support arms . . . safety grid is used as work platform . . . this illustration and those following indicate the sequence of erecting Stage I and Stage II . . .

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17. STAGE I EMPLACEMENT

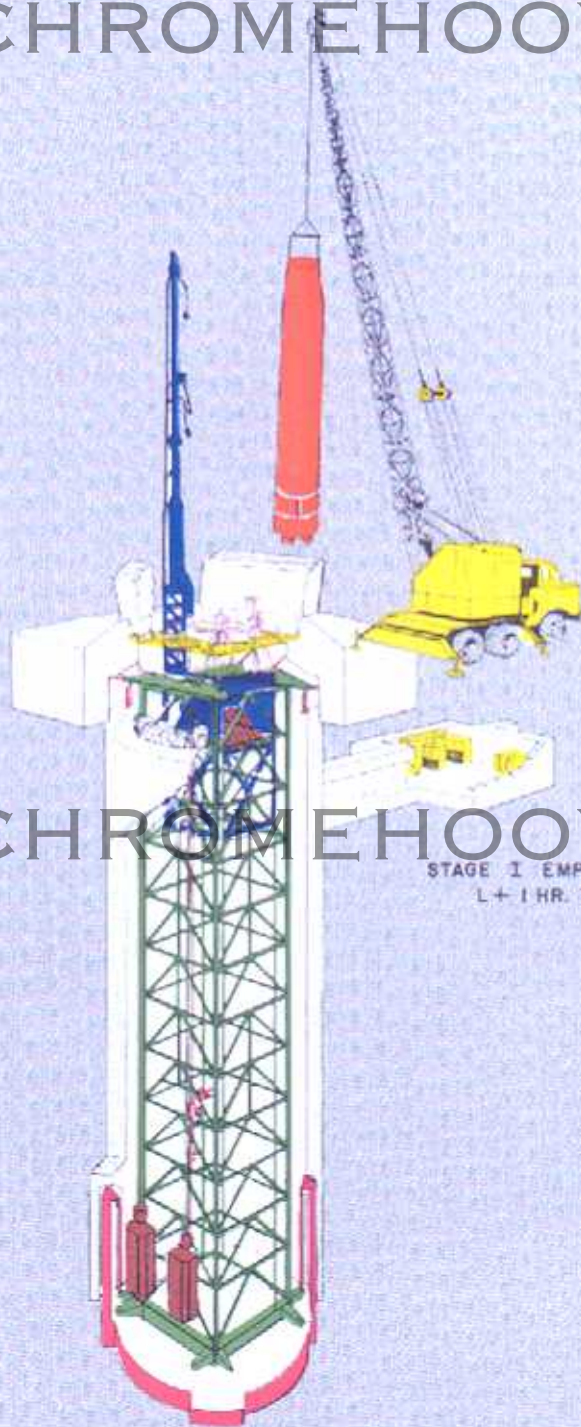
The illustration shows Stage I being lifted out over the silo mouth . . . the truck crane lowers Stage I to the missile support structure . . . the elevator platform has been raised to the surface . . . bolting of the first stage is accomplished from the temporary work platform . . . Stage I is emplaced by 1 hour 35 minutes after inception of erection procedure . . . elevator platform then lowered into silo to permit erection of Stage II on Stage I . . .

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STAGE 1 EMPLACEMENT
L+1 HR. 35 MIN.

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18. STAGE II EMPLACEMENT

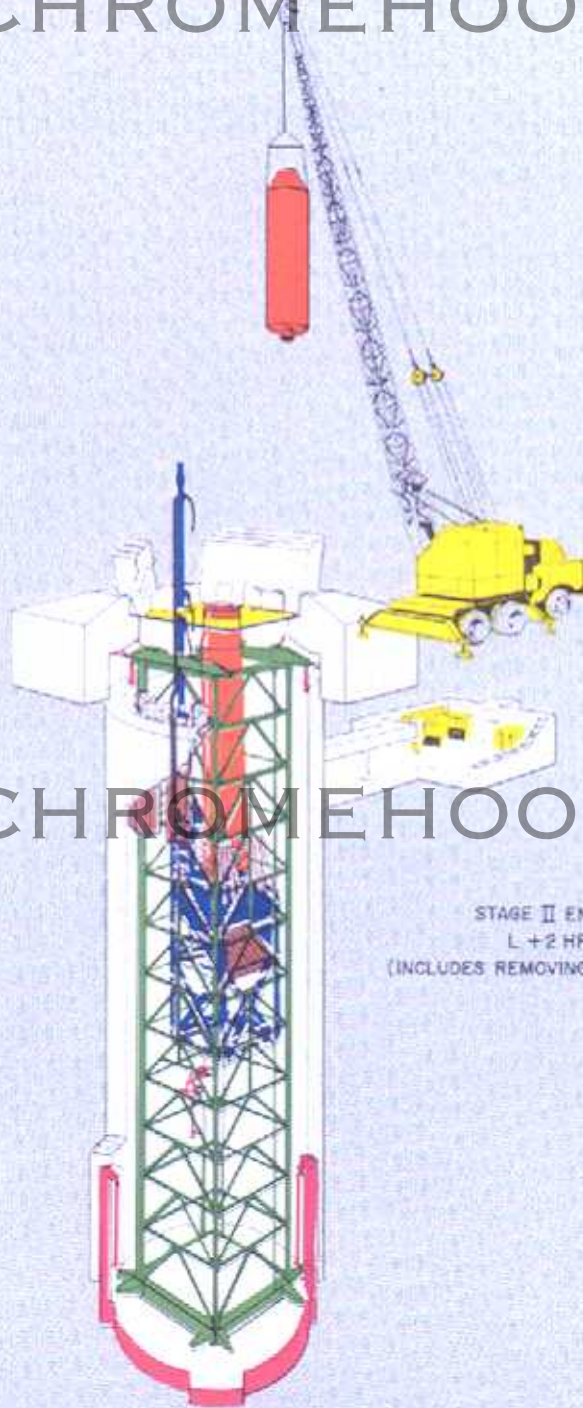
The elevator platform has been lowered into the silo . . . with Stage I . . . Stage II is being erected by use of truck crane . . . mating point for the stages provided at the work platform level . . . assembly of Stage II on Stage I is complete by L — 2 hours 55 minutes . . . both stages lowered into silo to permit nose cone emplacement . . .

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STAGE II EMPLACEMENT
L +2 HR. 55 MIN.
(INCLUDES REMOVING COVER AND ERECTION)

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19. NOSE CONE EMPLACEMENT

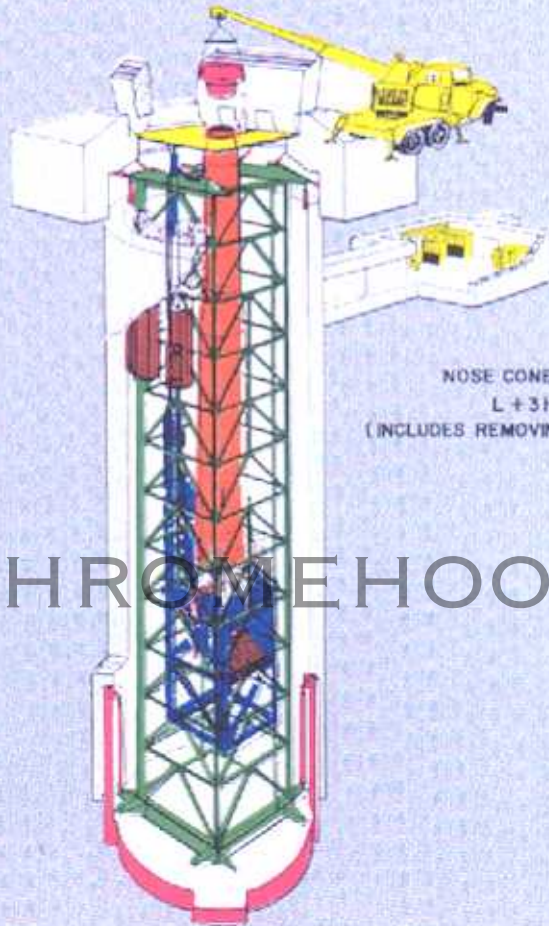
With Stage II mated to Stage I the elevator platform is lowered into the silo . . . nose cone removed from cradle . . . transport vehicle carries this . . . auxiliary crane removes nose cone . . . crane utilized vernier control to inch nose cone into position on Stage II . . . nose cone emplaced by L + 3 hours 40 minutes . . . complete missile now assembled . . . ready to be lowered to lowest silo position . . .

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NOSE CONE EMPLACEMENT
L + 3 HR. 40 MIN.
(INCLUDES REMOVING COVER AND ERECTION)

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20. HARD STATE

The missile is now assembled . . . the elevator platform . . . with missile mounted . . . is lowered into silo . . . portable silo mouth work platform is removed . . . double pivot doors closed . . . ground locks are released . . . system now placed on the isolation suspension system . . . umbilicals are connected . . . missile checkout begins . . . state of readiness exists . . . work platforms are up . . . fire door closed . . . personnel out of silo . . . the TITAN missile launcher system is hard.

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HARD STATE
L + 4 HR.

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21. PROPELLANT LOADING SEQUENCE

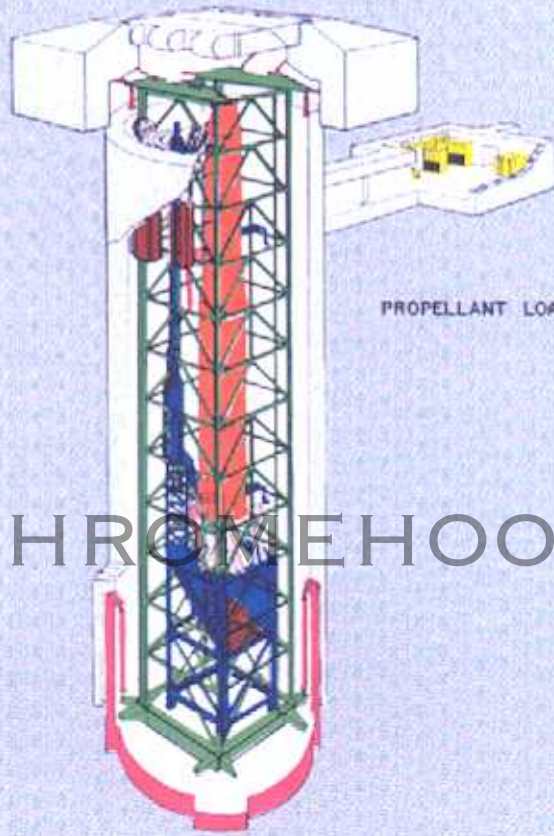
Fueling the TITAN missile is accomplished with the missile assembled . . . propellant loading may be done while system is hard . . . door is closed . . . missile in lowered position in silo . . . 10 minutes elapse during fueling . . . suspension system active to protect against nuclear attack . . .

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PROPELLANT LOADING X-900 TO X-300 SECONDS

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22. OPEN DOOR SEQUENCE

60 seconds necessary to open hydraulically actuated double pivot door
... crib then leveled and locked ... in-silo umbilicals are retracted ...
elevator locks released ... cables tensioned ... system is soft ... ready
to elevate missile to surface. ...

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OPEN DOOR X-300 TO X-240
LEVEL CRIB
LOCK CRIB
RETRACT IN-SILO UMBILICALS
RELEASE ELEVATOR LOCKS
TENSION CABLES

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23. ELEVATE MISSILE SEQUENCE

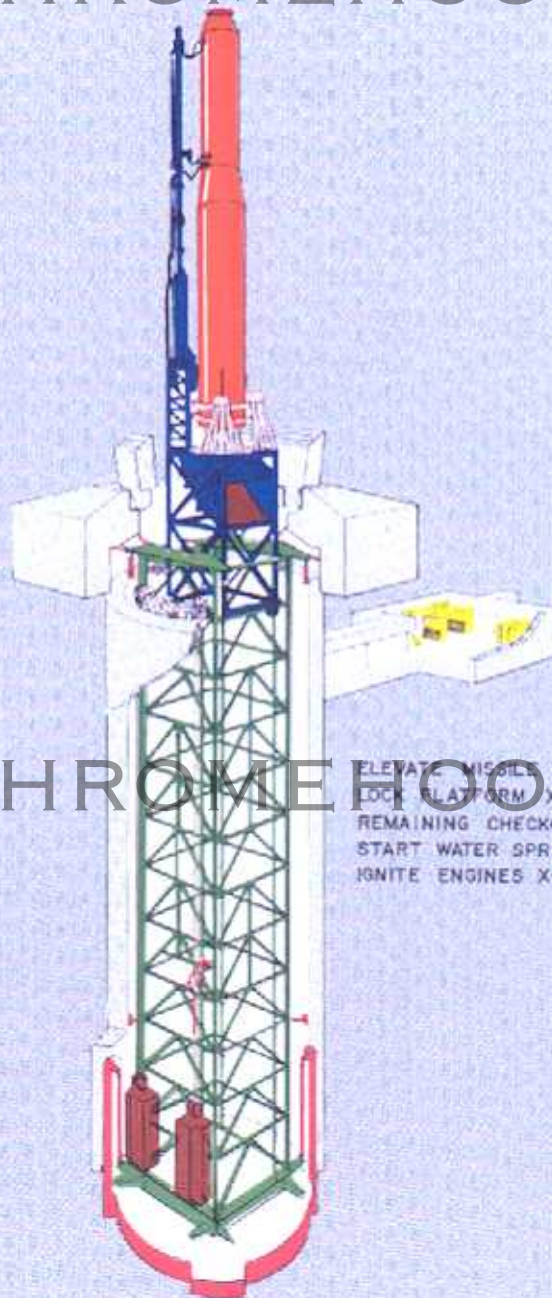
Two minutes are required to elevate the missile to the surface . . .
g-loading requirements must not be exceeded . . . 15 seconds required
to lock platform . . . remaining checkout and countdown continued . . .
water spray turned on 3 seconds prior to engine ignition . . . engine is
ignited at X-O . . .

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ELEVATE MISSILE X-240 TO X-120
LOCK PLATFORM X-120 TO X-105
REMAINING CHECKOUT X-105 TO X-0
START WATER SPRAY X-3
IGNITE ENGINES X-0

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24. MISSILE TAKEOFF SEQUENCE

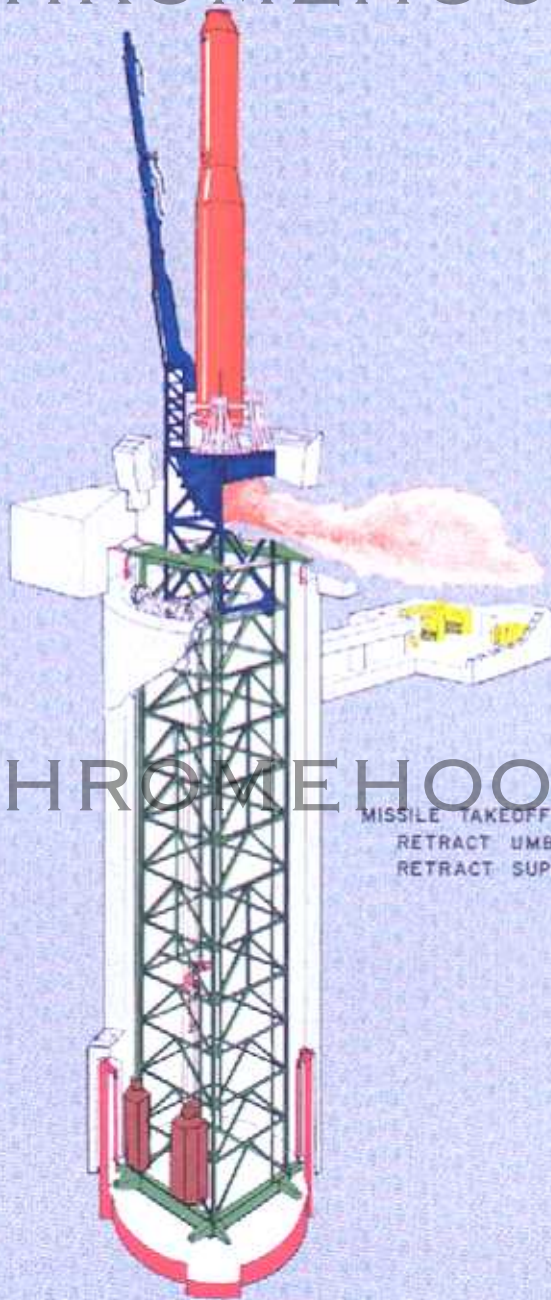
Engines build up proper thrust for 1.5 second . . . at X + 1.5 holddown bolts are detonated . . . simultaneously, remaining umbilicals are disconnected and retracted and the missile support arms retracted . . . the missile blasts off on its mission. . . umbilical tower has been folded to clear missile flight path . . .

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MISSILE TAKEOFF X+0 TO X+1.0
RETRACT UMBILICALS
RETRACT SUPPORT ARMS

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25. POST FIRING SEQUENCE

After missile firing, water spray continues for approximately 90 seconds . . . to cool flame deflector . . . umbilical tower is returned to normal vertical position . . . elevator platform is unlocked . . . system now ready to be lowered and be hard again . . .

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EDGE FLAME DEFLECTOR 5 TO 1000
RETURN UMBILICAL TOWER
UNLOCK PLATFORM

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26. LOWERING SEQUENCE

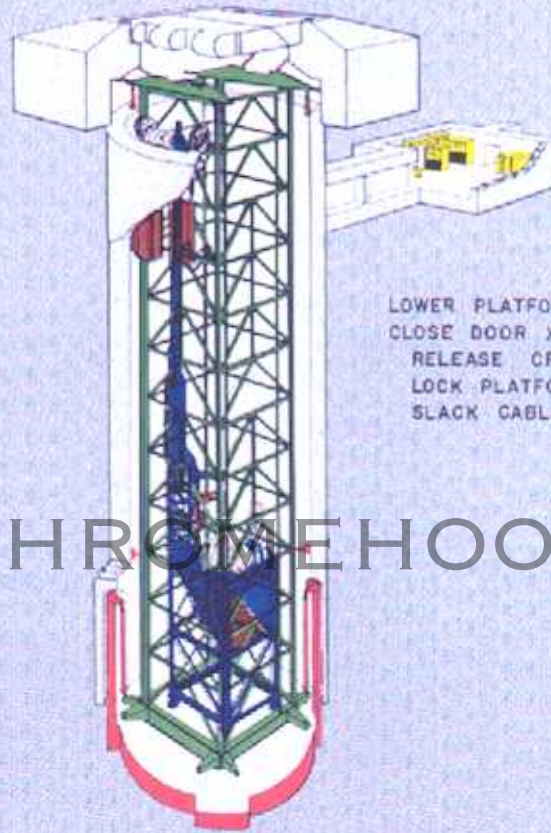
Elevator platform is lowered to silo bottom . . . two minutes . . . double pivot door closed . . . one minute . . . crib locks released . . . cables slackened . . . system rests on isolation suspension system . . . system is hard . . . if missile aborted, defueling accomplished . . . then necessary repairs made . . . system is available for reloading after refurbishing after successful launch . . .

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LOWER PLATFORM X+90 TO X+210
CLOSE DOOR X+210 TO X+270
RELEASE CRIB LOCKS
LOCK PLATFORM
SLACK CABLES

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CONCLUSION

Here has been presented the design complex making up the WS 107A-2 Launcher System. This system is a hardened type, capable of being organized into multiple-unit sites, self-sufficient for ten-day isolation periods and relatively easy to maintain.

The aims of maximum system reliability and operability, combined with maximum economy, have been readily effected.

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