Navy Aircrew Common Ejection Seat (NACES) SJU-17
Aeromedical Aspects of Ejection and Emergency Ground Egress

3710.7U

Unless operationally unfeasible, an NAP, AMSO, or FS shall address the aeromedical aspects of ejection and ground egress. Renewal may be accomplished within 60 days preceding expiration of current qualification. Qualification will expire after 12 months (expiration date is the last day of the month trained).When transitioning to aircraft with a different type of ejection system, commanding officers shall ensure that a thorough brief on the new system is conducted before the initial flight. The transition training shall concentrate on the differences in the system (i.e., ejection decisions, the envelope of the new system, seat-man separation, ejection initiation, ejection sequence, normal operations and malfunctions)

SEAT BRIEF AND EGRESS

1. Canopy system
    a. Ejection with canopy in any position other than fully locked could cause seat malfunction and serious injury.
    b. With aircrew head above canopy breakers, severe head and neck injury may occur
2. Strapping in (e.g., proper leg restraint placement, as applicable)
    a. Garter connections and proper positioning
    b. Restraint adjustment
    c. Lower Koch fittings function, adjustment and purpose
    d. Upper Koch fittings function and purpose
    e. SEAWARS purpose and function
    f. Shoulder restraint function, adjustment and purpose
    g. O2/communication cord, function, adjustment and purpose
    h. CRU-103 function, connection and purpose
    i. Safe arm handle function and purpose
    j. MOR handle function and purpose
    k. Emergency O2 actuator function and purpose
    l. Seat adjustment function, purpose, and adjustment
    m. Canopy breakers
    n. Ejection handle
    o. Seat safety pin
    p. Seat kit (SSK)
        i. Release over land is not recommended
        ii. Contents:
            1. ground/Air emergency card
            2. nylon cord
            3. bailing sponge
            4. combat casualty Blanket
            5. survival Kit (2)
            6. URT-33
            7. drinking water
            8. smoke and illumination signal
            9. sea dye marker
            10. surgical tubing
            11. vinyl envelope
    q. Lift raft release handle location and function
    r. URT-33 function, location, and purpose
        i. Search areas range from 12-15 nautical miles

ii. Doesn't signal when submerged
iii. Starts signaling automatically upon ejection

3. Ground emergency egress (with/without seat kit).
    i. Notify crew member
    ii. Ejection seat SAFE/ARMED handle-SAFE
    iii. Throttle – OFF
    iv. PARKING BRAKE handle – PULL
    v. Canopy – OPEN

    <u>If canopy cannot be opened –</u>

    vi. MDC firing handle – pull

    <u>Evacuate with survival kit</u>

    vii. Upper Koch fittings – RELEASE
    viii. Manual override handle – PULL

    <u>Evacuate without survival kit</u>

    ix. Koch fittings – RELEASE UPPER AND LOWER
    x. Manual override handle – PULL
    xi. Oxygen/communication hose – DISCONNECT

AEROMEDICAL ASPECTS OF EJECTION

4. Ejection decision
    a. Out of control flight eject by 10K AGL
    b. Controlled flight eject no lower than 2K AGL
    c. Should be briefed prior to flight
    d. Psychological facts that cause ejection delay.
5. Ejection envelope
    a. Zero airspeed zero altitude capability
    b. Tested at 136-213 lbs but OPNAVINST widens range to 100-235 lbs.
    c. Functions from ground to 50,000 ft
    d. 550 KIAS maximum
    e. 250 KCAS is the optimum airspeed for ejection
6. Optimal body position
    a. Head firmly against headrest
    b. Elevate chin 10 degrees press shoulders back against the seat
    c. Hold elbows firmly to sides
    d. Press buttocks firmly to the back of the seat
    e. Attempt to place thighs firmly to the seat
    f. Place heels firmly on the deck
7. Ejection initiation
    a. 40-60 lbs of force required to pull ejection seat handle
    b. With command ejection selector in SOLO and ejection seat handles are pulled simultaneously seats may collide
    c. In FWD BOTH/AFT self mode MDC firing handle should be pulled by forward seat if aft seat is ejected.
    d. Use one of the 2 approved had position for ejection initiation
    e. Pull ejection handle up and towards abdomen keeping elbows close towards sides
8. Ejection sequences/phases/modes, drogue/stabilization
    a. 5 modes
        i. High altitude
        ii. Medium altitude
        iii. Low altitude (3 modes)
9. Seat/man separation and chute deployment
    a. High altitude (>18K)
        i. Seat man separation and chute deployment occurs at 18K MSL
        ii. If over high terrain, consider using the MOR

b. Low altitude (<18K)
    i. Seat man separation and chute deployment occurs between .65-3.10 seconds depending on altitude and airspeed

10. IROK/ADR/PLF
    a. Over water
    b. Over land
    c. PLF
        i. Balls of feet
        ii. Side of calf
        iii. Side of thigh
        iv. Side of buttocks
        v. Shoulder blade
11. Hazards
    a. Flash burn
    b. Cockpit missile hazards/loose gear
    c. Poor body position
    d. Excessively heavy or light body weight
        i. Reduces stability of seat post ejection
        ii. Individuals >245 lbs may not clear aircraft during ejection
        iii. Heavy individuals with have a higher descent rate after parachute deployment
    e. Wind blast injuries
        i. Ensure mask is on and visor is down
        ii. Proper body position is key to reducing flailing injuries
    f. ALSS fit
        i. DO NOT attempt to make adjustments to your torso harness. If you have fitting issues with the harness see your PR shop
    g. Landing in winds in excess of 25 knots increases risk of severe injury or death