C2103
Briefing Guide
(Worksheet)

Planned Route:
- Takeoff: KNSE, Rwy 05
- Altitude: MOA Limits
- Route: North MOA
- Training Device: UTD/OFT

SYLLABUS NOTES:
Students will strap-in for all events in this block.

Students shall use an unaltered Quadfold NATOPS Checklist for all events in this block.

Special Syllabus Requirement
Blindfold Cockpit Check – Student demonstrates a safe knowledge of location of the following:
- emergency firewall shutoff handle
- CFS handle
- PCL cutoff
- flap selector
- landing gear handle
- emergency gear handle
- back-up VHF radio
- bus tie switch
- PMU switch
- PROP SYS circuit breaker
- pressurization control switch

Discuss

a. All Normal Operating Procedures
   ➢ Answer any question the student may have from previous events

b. Aborted Takeoff
   ➢ Reasons to conduct an aborted takeoff
   ➢ Critical Action Items
   ➢ How to obtain Maximum Braking Action
   ➢ Maximum abort speed definition
   ➢ Calculate Max Abort Speed (wet runway)

   c. Aircraft Departs Prepared Surface
      ➢ Procedural Steps
      ➢ Activation of CFS or Ejection considerations

   d. CFS and Ejection procedures from the ground
      ➢ Safety considerations and seat limitations

      Ejection Seat Sequence Mitigation Procedures

JPPT 1542.166B C2103
### T-6B Contact Cockpit Procedures
#### C2100 BLOCK

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**Special Syllabus Requirements**
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**Note:** The student shall bring all required flight gear and practice strapping in on every event in this block.

**SSR’s**
- C2102 Loss of Start Ready Light during start sequence
  - C2103 Blindfold Cockpit Check – Student demonstrates a safe knowledge of location of the following:
    - Emergency firewall shutoff handle, CFS handle, PCL cutoff, flap selector, landing gear handle, emergency gear handle, back-up VHF radio, bus tie switch, PMU switch, PROP SYS circuit breaker, and pressurization control switch.

The following procedures will be discussed and performed by the student on the indicated event:

**C2101:** Introduce basic checklist procedures, seat and rudder pedal adjustments, UFCP, basic FMS setup, voice reports.

**C2102:** All normal operating procedures, abnormal starts, loss of START READY Light during start sequence, engine fire on the ground, emergency engine shutdown, and emergency ground egress.

**C2103:** All normal operating procedures, aborted takeoff, Aircraft departs prepared surface, CFS and ejection procedures from the ground.
EMERGENCY GROUND EGRESS

NOTE

In a situation requiring immediate ground egress, the ejection system has the capability for 0/0 ejection.

If emergency egress is required on the ground (Figure 3-1), perform the following steps after the aircraft has come to a complete stop and the engine has been shut down:
* 1. ISS mode selector - SOLO

**WARNING**

Failure to ensure that the ISS mode selector is set to SOLO may result in the inadvertent ejection of one or both seats.

* 2. Seat safety pin - Install (BOTH)

**WARNING**

Failure to insert both ejection seat safety pins (if occupied) before ground egress may result in inadvertent activation of ejection sequence and subsequent injury or death when performing emergency ground egress.

* 3. PARKING BRAKE - As required
* 4. Canopy - Open

IF CANOPY CANNOT BE OPENED OR SITUATION REQUIRES RIGHT SIDE EGRESS:

* 5. CFS handle safety pin - Remove (BOTH)
* 6. CFS handle - Rotate 90° counterclockwise and pull (BOTH)

**WARNING**

- If the canopy fracturing system malfunctions in conjunction with a canopy latch failure in the locked position, ejection may be the only option remaining to exit the aircraft. Aircrew shall remove the ejection seat safety pin and ensure shoulder straps, lap straps, and leg restraint garters are still attached prior to pulling ejection handle.

**TAKEOFF EMERGENCIES**

There are several factors which affect the pilot’s decision to takeoff or abort. The decision to takeoff or abort should be based on the following:
- Runway length and condition, terminal weather conditions and area traffic.
- If adequate directional control cannot be maintained or any system emergency affecting safety of flight is experienced prior to Max Abort Speed, the takeoff should be aborted.

**ABORT**

If it becomes necessary to abort the takeoff, concentrate on maintaining aircraft control, specifically directional control, while stopping the aircraft on the remaining runway. To abort a takeoff, accomplish the following:
* 1. PCL - IDLE
* 2. BRAKES - AS REQUIRED

Refer to Section II for description of maximum braking.
**WARNING**

After a stop which required maximum effort braking and if overheated brakes are suspected, do not taxi into or park in a congested area until brakes have had sufficient time to cool. Do not set parking brake.

**BARRIER ENGAGEMENT**

Aircrews will not call for a raised barrier in the event of an aborted takeoff. If a raised barrier is already up, aircrews will steer around it, to include departing the prepared surface if necessary, or ejecting before engagement.

**WARNING**

- Significant aircraft damage can be anticipated when engaging a raised web barrier and webbing may preclude normal canopy opening.
- If contact with a lowered BAK-15 is imminent, discontinue braking before reaching lowered barrier, then recommence once past barrier. In the unlikely event that webbing catches on aircraft, there may be unexpected directional control problems.

**AIRCRAFT DEPARTS PREPARED SURFACE**

If it appears likely that the aircraft will depart the prepared surface, execute the Emergency Engine Shutdown On The Ground procedure.

**TIRE FAILURE DURING TAKEOFF**

**IF THE DECISION IS MADE TO STOP:**

1. Abort

**IF TAKEOFF IS CONTINUED:**

2. Gear and flaps position - Do not change
3. Straight-in approach - Execute

**CAUTION**

Land on side of runway corresponding to the good tire (put drag in the middle). Maintain directional control using rudder, brakes, and nose wheel steering as required.

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**ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF (SUFFICIENT RUNWAY REMAINING STRAIGHT AHEAD)**

A complete engine failure immediately after takeoff is an extremely critical emergency requiring immediate action and decision making by the pilot. Indications are a total loss of power and a fairly rapid reduction in airspeed. A positive nose down pitch change will be needed to maintain a safe flying airspeed. If sufficient runway remains, the best option is to continue straight ahead and land. If that is not possible, careful consideration of the recovery situation must be made. An early decision to eject may be the best option. Anticipate increased brake sensitivity when braking above 80 KIAS. In all cases, control the aircraft energy state through prudent use of altitude, airspeed, and configuration.

**WARNING**

- If insufficient runway remains to land straight ahead, consider immediate ejection.
- Do not sacrifice aircraft control while troubleshooting or lowering gear with emergency system.

* 1. **AIRSPEED - 110 KNOTS (MINIMUM)**
* 2. **PCL - AS REQUIRED**

**NOTE**

With a loss of hydraulic pressure, landing gear and flaps cannot be lowered by normal means.

* 4. Flaps - As required

**IN-FLIGHT EMERGENCIES**

**ENGINE FAILURE DURING FLIGHT**

In the event of an engine failure, a decision to eject, land, or airstart must be made. The altitude at which the engine fails will determine the time available to perform the following procedures.

Initial indications of engine failure/flameout are: loss of power and airspeed; rapid decay in $N_1$, torque, and ITT; and propeller movement towards feather due to loss of oil pres-
ANGLE OF ATTACK (AOA) LANDING

Angle of attack (AOA) landings utilize the normal landing pattern in Figure 2-8 or Figure 2-9 while maintaining optimum AOA throughout the final/approach turn. On downwind, slow to optimum AOA (on-speed amber donut on indexer) prior to the perch/abeam position. After the perch/abeam position, maintain on-speed AOA with pitch and maintain controlled descent rate with power. Maintain an appropriate angle of bank and line up on runway centerline. On final, coordinate stick and power inputs to land at desired touchdown point while continuing to fly on-speed AOA. Round out and touch down normally.

MAXIMUM BRAKING

Maximum braking effectiveness is obtained with a steady application of brakes.

The physical limitations of the tire and brake system make it extremely difficult to consistently achieve maximum braking action, particularly at high speeds where the weight component is reduced due to lift. A smooth, single application, increasing as airspeed decreases, offers the best braking opportunity. Great caution should be used when braking at speeds above 80 KIAS. Locked brakes are difficult to diagnose until well after the fact. Braking should be discontinued at the first sign of directional control problems and then cautiously reapplied. At speeds below 80 KIAS, the chances of approaching maximum braking action are greatly increased.

WARNING

- The aircraft is not equipped with anti-skid or anti-lock protection. Do not apply wheel brakes until the aircraft is firmly on the ground and the weight is fully on the wheels. If a wheel brake locks up before the weight of the aircraft is fully on the wheels, the brake may not release even with the full weight of the aircraft on the wheel. The result may be a blown tire and possible degradation of directional control on the ground.

- After a landing which required maximum effort braking and if overheated brakes are suspected, do not taxi into or park in a congested area until the brakes have had sufficient time to cool. Do not set parking brake.

- If brake pressure appears to fade during application, or brakes are not responding as expected, fully release brakes, then re-apply.

NOTE

All stopping distances computed from Appendix A are based on maximum braking. Maximum braking is very difficult to achieve. Variables such as brake and tire condition, pilot technique, etc., may increase computed landing distances.

AFTER LANDING

1. ISS mode selector - SOLO or CMD FWD (Verify ISS mode selector lever is locked in SOLO or CMD FWD)

WARNING

- Both seats will eject if the ISS is in BOTH and an unpinned ejection handle is pulled, even if the other seat is pinned.

- With the ISS mode selector set to CMD FWD, the crewmember in the rear cockpit initiates ejection of the rear seat only, and the crewmember in the front cockpit initiates ejection for both front and rear seats with the rear seat ejecting first even if the rear seat ejection handle safety pin is installed.

2. Seat safety pin - Install (BOTH)

WARNING

- Ensure ejection seat safety pin is fully inserted to preclude inadvertent seat actuation.

- In the event of a dropped ejection seat safety pin, do not use the CFS handle safety pin to attempt to safe the ejection seat. The ejection seat safety pin and the CFS handle safety pin are not interchangeable. Using the CFS handle safety pin in place of the ejection seat safety pin could result in inadvertent seat actuation.

3. PROBES ANTI-ICE switch - OFF
4. Flaps - UP
5. Trim interrupt button - Depress (Verify TRIM OFF and TAD OFF message illuminated and TAD switch moves to OFF)
6. Trim - Set for takeoff
CFS and Ejection procedures from the ground

• A little bit of crew coordination will go a long way as far as safety is concerned if faced with using CFS during ground operations. The idea is coordinating the “CFS – Rotate and Pull” if using the internal CFS handles between front and rear cockpits. There are a few techniques to accomplish this task and will be briefed between crewman during the NATOPS preflight brief prior to flight.

• If required, right side egress is possible with use of CFS - ensure oxygen mask is on and visor is down prior to actuating the CFS system. Internal CFS handles activate CFS charge for the respective transparency. External CFS handles activate both CFS charges for each cockpit.

• In a situation (e.g., fire or imminent collision) requiring immediate ground egress, the ejection system affords a 0/0 ejection capability.

• You should ensure the canopy is going to open before un-strapping (i.e., ensure that it is not jammed by the incident that has led to your Emergency Ground Egress) so as to still be able to eject, should that option of egress need to be exercised.
AIR FORCE TO 1T-6B-1  
NAVY NAVAIR A1-T6BAA-NFM-100

Runway Available

Runway available is the runway length minus the aircraft lineup distance.

Takeoff Ground Run Distance

Takeoff ground run distance is defined as that runway distance from brake release to lift-off. It is achieved by following the normal takeoff distance associated procedures for a given rotation speed, at the mission-specified weight, ambient temperature, pressure altitude, runway wind and gradient, and appropriate takeoff configuration.

Maximum Braking Speed (V_B)

Maximum braking speed is the maximum speed from which the aircraft can be brought to a stop without exceeding the maximum design energy absorption capability of the brakes (3.96 Million ft-lb).

Maximum Abort Speed

Maximum abort speed is the maximum speed at which an abort may be started and the aircraft stopped within the remaining runway length. Allowances included in the data are based on a 3-second reaction at Maximum Abort Speed to recognize decision to abort and select idle power, during which time acceleration continues. Additional allowance includes a 3-second period to apply the brakes after idle power is selected. Speed may increase up to 20 knots during this 6-second period. When the abort speed is above rotation speed, rotation speed (V_R) becomes the abort speed.

For operation with a tailwind, maximum braking speed limits should be observed (Figure A3-2). If the abort speed is greater than the maximum braking speed less 20 knots, the maximum braking speed (less 20 knots) becomes the abort speed.

Lift-off

Lift-off is the moment during takeoff at which 100% of the aircraft weight is first supported by aerodynamic forces and no tires are in contact with the runway.

Distance to 50-foot Obstacle

Distance to 50-foot obstacle is the sum of the takeoff ground run distance, plus the airborne horizontal distance needed to accelerate and climb to the 50-foot obstacle height at or above the obstacle climbout speed.

Rotation Speed

Rotation speed (V_R) is the speed which permits attaining obstacle speed at the 50-foot obstacle height above the runway.

Obstacle Speed

Obstacle speed (V_OBS) is the target speed at which the aircraft crosses the 50-foot obstacle height while accelerating to 140 KIAS at a 15° pitch attitude.

Stall Speed (V_S)

Stall speed is the higher of:

1. The airspeed at which the aircraft ceases to fly due to the loss of aerodynamic lift with the input of slow smooth control movements; or
2. The minimum controllable steady flight speed.

Climb Gradient

Climb gradient is the measured change of geometric altitude versus horizontal distance, typically feet per nautical mile. Charts which present climb gradient are calculated on actual (gross) climb performance.

FACTORS AFFECTING TAKEOFF

Wind Corrections

Accounting for wind when planning takeoff requires that the wind direction and speed known. The headwind, tailwind, or crosswind component can then be determined using the Takeoff and Landing Crosswind chart in Figure A3-6.

Headwind and Tailwind

The wind grids include factors of 50% for steady state headwinds and 150% for steady state tailwinds. Reported wind components may therefore be applied directly to the chart.

Crosswind

When determining the crosswind component, enter the Takeoff and Landing Crosswind chart with the sum of the steady wind value plus the gust increment. The maximum demonstrated dry runway crosswind for takeoff and landing is 25 knots.

Gusts

The gust increment is obtained from ground meteorological sources. It is the difference between the reported steady wind velocity and the reported peak gust velocity. Increase
**Given Conditions:** Temp: 20°C/70°F  
PA: 200 ft  
A/C wt: 6900 lbs  
Rwy Avail: 6000 ft  
Slope: 0%  
HW: 10 kts  
RCR: 12 (wet)

**Find:**  
Max abort speed = 76 KIAS

Your max abort speed is **LESS THAN** your rotate speed.  

**SOMETHING TO CONSIDER!**
# Ejection Seat Sequencing Mitigation

## Procedures

### Dual Flights
- **ISS Mode Selector** – SOLO in flight (Before Takeoff checks)
- RCP occupant shall initiate ejection ON third “EJECT” call
- FCP occupant shall initiate ejection NET ~0.5 sec AFTER third “EJECT” call

### Solo Flights
- Normal NATOPS Procedures Apply
- Ensure ISS Mode Selector is in SOLO

## Contingencies

### FCP Incapacitation
1. **ISS Mode Selector** – BOTH
2. RCP – Eject

### ICS Failure
- “Face curtain” signal serves as the preparatory command during a controlled ejection. A thumbs up from each occupant is required to initiate ejection sequence.
- FCP shall initiate ejection sequence with three “raps” of the canopy
- RCP occupant shall initiate ejection ON third “rap”
- FCP occupant shall initiate ejection NET ~0.5 seconds AFTER third “rap”

## Misc

### Unqualified personnel prohibited
- Must be NATOPS qualified, enrolled in a formal aviation syllabus, or an observer qualified Naval Flight Officer, Flight Surgeon, or Aeromedical Safety Officer

### Delaying ejection below 2,000 ft AGL is not recommended

### Any delays may negatively impact the ejection envelope
- FCP occupant initiates ejection NET ~0.5 sec AFTER third “EJECT” call or immediately after confirming the RCP occupant has ejected
- Proper manual ejection sequencing requires the RCP occupant to eject prior to the FCP occupant

## CRM

### RCP Delaying Ejection
- May lead to collision with FCP seat
- RCP shall not hesitate or delay ejecting
- RCP occupant shall initiate ejection ON third “EJECT” call

### FCP Initiating Ejection Too Soon
- May lead to collision with RCP seat
- FCP shall initiate ejection NET ~0.5 sec after third “EJECT” call