Tu-144 Flight Manual

Taxiing
1. Extend the canards, lower the nose and droop the elevons (press F8).

2. Taxiing in the Tu-144 is like it is in any other aircraft. Keep the nose wheel aligned with the center line all the times.
Note: Do not exceed 25 knots on the ground

3. Slow to around 8 to 12 knots while turning the aircraft. Do not stop the aircraft while in a turn.

4. After engine startup is completed and IFR and taxi clearances are given, apply small amounts of thrust to get the Tu-144 rolling.

Takeoff
Note: The next few steps happen in rapid succession, so read this part over once or twice before attempting a takeoff. The afterburners will not engage below a certain power threshold, so ensure that full throttle has been applied before engaging them.

1. After takeoff clearance is given, taxi the aircraft and align it with the runway centerline. Make sure no warning lights are on.

2. After verification that the Master Caution and Master Warning lights are off, push the throttles to maximum and turn the afterburners on (Shift + F4).
Note: V_1 and V_2 will vary depending on weights and conditions.

3. V_1, which is approximately 165 knots, is decision speed.

4. V_r is approximately 190 knots. At this point, pull back on the yoke to about 10º and hold.

5. V_2 is approximately 210 knots, the aircraft takeoff safety speed. Hold this speed until a positive rate of climb is established. Once it is established, raise the landing gear.

Climb
1. Accelerate the aircraft to 250 knots, the initial climb-out speed. Raise the elevons, nose and retract the canards once this speed is reached (press F5). Pitch up as necessary to maintain the 250 knots airspeed.

2. After approximately 75 seconds, lower the nose to decrease the rate of climb and turn off the afterburners.

3. Reduce throttle to maintain 250 KIAS while climbing at 2000 FPM (this is to keep fuel burn to a minimum).

4. While crossing 8,000 ft., enough airspeed has been obtained to bring the vertical speed up to 3000 FPM.

5. At 10,000 ft., increase speed to 400 KIAS and maintain 3000 FPM climb to between FL300-FL330. When the Mach airspeed gauge reaches Mach 0.95, engage the Mach hold button on the autopilot.

Subsonic Cruise
1. Before supersonic cruise can begin, level off at FL300-FL330 and accelerate to Mach 0.95.

Supersonic Cruise
1. Once the aircraft is at FL300 and Mach 0.95, disengage the auto-throttles, push the thrust to maximum, and turn on the afterburners until reaching Mach 1.01.

2. After Mach speed has been reached, set altitude hold for FL500 and begin climbing at 1500 FPM.

3. While climbing, the Mach needle will move slowly up. When reaching Mach 1.5, decrease the climb rate to 1500 FPM and continue accelerating and climbing.

4. While passing through Mach 1.7 (around 43,000 ft.), decrease the rate of climb to 1000 FPM and disengage the afterburners.

5. Climbing through FL450-FL500 can become tricky. If takeoff was with full fuel, fuel management will become crucial at this point.
Note: At this point in the climb, you may have to lower the climb rate to 100 FPM to keep the speed up. If the speed begins to drop, lower the nose to regain speed.

6. At about FL500, you should be at Mach 2. Cruise is between Mach 2.00 and Mach 2.07.

Cruising
1. Set the autopilot altitude hold to FL590 while climbing at 50 FPM.
Note: This is for added realism; as the Tu-144 burns off fuel, it begins a steady climb.

Descent
1. About 250-300 nm away from your destination, begin your descent.

2. Disengage the Mach hold and engage the IAS hold button at 350 knots. When this speed is attained, begin descending at 3000 FPM. Continue descending through FL300-FL180 at 2600 FPM-3000 FPM. Descent rates will vary depending on conditions and fuel load.

3. At about 10,000 ft., you should be about 20 nm away from the pattern. Slow to 250 knots or slower before starting your descent below 10,000 ft.

Approach
Note: During the Approach phase of the flight, the aircraft tends not to slow down. Thus it is crucial that the aircraft's speed be maintained at 250 knots until lined up with the centerline.

1. At 12,000 ft., begin a descent at 1800 FPM to 6,000 ft. Once below 10,000 feet, extend the canards (press F7).

2. At 6,000 ft., lower the nose and lower the elevons (press F8). Maintain at least 230 knots while maneuvering, and allow more space to maneuver as is appropriate for this above-average speed. When maneuvering, avoid steep turns.

3. Once aligned with the centerline, reduce speed to 210 knots and maintain this speed. Lower the landing gear.

Landing
1. On final approach, maintain a speed of 210 knots.

2. When 2-3 nm from the runway, lower the throttles so that the aircraft will be at 190 knots when crossing the threshold. If necessary, arm the braking parachute (Shift + /).

3. A constant attitude hold is necessary to make a landing in the Tu-144. The aircraft does not flare like a normal aircraft. An attitude of 10.5º must be kept the entire time. If you are too low, the aircraft will bounce; too high, and you may have a tail strike.

4. After the main tires touch the runway, engage full reverse thrust and apply the brakes.
Note: The aircraft is still in a high nose attitude. To see the runway, press Shift + Enter a few times to raise the seat.

5. Slow to 20 knots for a high speed taxiway turnoff or 10 knots for any other taxiway turnoffs.

6. After arriving at the gate, raise the nose and elevons fully and retract the canards (press F5).

This flight manual was created specifically for Concorde Virtual, a virtual airline of SimAirline.net, by Bryan O'Donnell and modified for the Tu-144 by Mark Jahnke.