Traffic circuit

VFR Traffic Circuit Operations

A **traffic circuit** (or traffic pattern) is a standard flight path used by aircraft operating at uncontrolled airfields and some controlled aerodromes. The circuit provides a structured approach and departure system that enhances **safety, situational awareness, and collision avoidance**. It is also an essential training tool for pilots, allowing them to practice takeoffs and landings efficiently.

Traffic circuits are typically flown at **1000 feet above ground level (AGL)** unless otherwise specified. At major controlled airports, standard circuits may not be published, and ATC provides instructions for circuit operations based on traffic conditions.

Circuit Components

The traffic circuit consists of the following key segments:

Departure (Upwind)

- Aircraft climbs out after takeoff, completing essential post-takeoff procedures (e.g., retracting gear/flaps, setting climb power).
- ATC may issue specific departure instructions based on airspace constraints.

Crosswind

- After reaching a safe altitude, the aircraft turns **90 degrees** to the crosswind leg.
- By this point, the aircraft should be nearing the **circuit altitude**.

Downwind

- The aircraft flies parallel to the runway but in the **opposite direction** of landing.
- This is where **position reports** are typically made to inform ATC and other traffic of the aircraft's location.
- Pilots conduct pre-landing checks, adjusting speed and altitude as needed.

Base Leg

- A **90-degree turn** positions the aircraft perpendicular to the runway.
- Descent is initiated, and the **final landing configuration** (flaps, gear) is established.
- Pilots confirm approach clearance (if required) before turning onto final.

Final Approach

1. The aircraft aligns with the runway centerline and descends for landing.
2. ATC provides final **wind and clearance information** at controlled aerodromes.
3. Minimal radio transmissions should occur at this stage to allow the pilot to focus on landing.

> Standard traffic circuits are typically flown with **left turns** unless otherwise specified. If right-hand circuits are in use, all references should include "right" (e.g., **right downwind, right base**).

Circuit Phraseology

Scenario	English	French
Requesting Traffic Circuit	Tower, XYZ123, C172, Apron 2, one person, information Golf, for VFR traffic circuit, request taxi.	Tour XYZ123, C172, Apron 2, une personne, information Golf, pour circuit VFR, demande roulage.
Taxi Clearance	XYZ123, taxi to holding point runway 32 via A and B, cross runway 06, QNH 1018.	XYZ123, roulez au point d'arrêt piste 32 via A et B, traversez piste 06, QNH 1018.
Holding Point Report	XYZ123, holding point runway 32, ready for departure.	XYZ123, point d'arrêt piste 32, prêt au décollage.
Takeoff Clearance	XYZ123, join right downwind runway 32, wind 310 degrees, 10 knots, runway 32, cleared for takeoff.	XYZ123, rejoignez vent arrière droit piste 32, vent 310 degrés, 10 nœuds, piste 32, autorisé au décollage.
Downwind Report	XYZ123, right downwind runway 32, for landing.	XYZ123, vent arrière droit piste 32, pour atterrissage.
Landing Clearance	XYZ123, wind 310 degrees, 10 knots, runway 32, cleared to land.	XYZ123, vent 310 degrés, 10 nœuds, piste 32, autorisé à atterrir.
Taxi to Apron	XYZ123, taxi to Apron 2 via D and I.	XYZ123, roulez au parking 2 via D et I.

Right-Hand Circuits & Special Considerations

- **Standard circuits** use **left turns** unless otherwise published.
- If a **right-hand circuit** is required, ATC must explicitly instruct the pilot (e.g., **"join right downwind"**).
- Turns after takeoff, especially **right turns**, require **explicit ATC clearance** to prevent airspace conflicts.

> E.g. If departing from **runway 32 via an eastern exit route**, ATC should approve a right turn to avoid a long left turn over the airport.

Circuit Operations at Controlled Airports

At larger controlled airports, standard traffic circuits may not exist due to:

- The variety of aircraft types (from small aircraft to large airliners).
- The need for flexible ATC separation.

At these airports, pilots may be given customized **departure and arrival instructions** instead of following a published circuit.

Traffic Circuit Delays & ATC Management

When integrating VFR circuits into busy airspace, ATC may use various **delay techniques**:

1. **Extending the Downwind**
   - ATC instructs pilots to **continue downwind** past the normal turning point.
   - Used to create spacing for IFR arrivals or departing traffic.
2. **360-Degree Orbits**
   - A pilot may be instructed to **orbit** at a safe location within the circuit.
   - Typically used when ATC needs additional time to manage runway operations.
3. **Holding at a Reporting Point**
   - ATC may direct pilots to **hold at a designated reporting point** before joining the circuit.
   - Ensures orderly sequencing of multiple VFR arrivals.

> If a pilot is cleared for one segment of a circuit (e.g., downwind), they **automatically continue** through base and final unless further ATC instructions are given. Controllers must use delaying techniques proactively if separation is required.

Revision #4
Created 25 January 2025 02:22:16 by Ali
Updated 17 March 2025 02:19:35 by Ali