Typical Airliner Demonstration Profile

Aircraft Assumed: A modern twin-jet airliner (e.g., Boeing 787 or Airbus A350).
Crowd Line: The line of spectators on the airfield. All maneuvers are carefully planned to occur in front of and parallel to this line.
Show Center: A point on the ground directly in front of the crowd, used as a reference for many maneuvers.

Step 1: The High-Speed Fly-past (The "Arrival" or "Opener")

- **Purpose:** To make a dramatic entrance and showcase the aircraft's sleek, high-speed profile.
- **Altitude:** 500 - 1,000 feet AGL (Above Ground Level).
- **Airspeed:** High-speed, typically 300 - 350 knots (approx. 345 - 400 mph). This is below the aircraft's maximum operating speed (Vmo) but fast enough to be impressive.
- **Configuration:** "Clean" – Landing gear and flaps fully retracted. This is the most aerodynamically efficient configuration.
- **Description:** The aircraft approaches from one side of the show line, flying parallel to the crowd. It passes show center at high speed, often with a steep bank angle turn away at the end to set up for the next maneuver. The sound of the engines at high power is a key part of this pass.

Step 2: The Low-Speed Fly-past (The "Slow Flight" Demo)

- **Purpose:** To demonstrate the aircraft's stable handling characteristics at very low speeds, high angle of attack, and its high-lift devices (flaps and slats).
- **Altitude:** 200 - 500 feet AGL.
- **Airspeed:** Approach speed or slower, typically 130 - 160 knots (approx. 150 - 185 mph).
- **Configuration:** "Dirty" – Landing gear down. Flaps and slats extended to a high-lift setting, often full landing configuration (Flaps 30 or 40).
- **Description:** The aircraft makes another pass parallel to the crowd. The nose is pitched up significantly (high angle of attack) to maintain lift at such a low speed. This pass highlights the whooshing sound of the air over the flaps and the deep rumble of the gear. It showcases the aircraft's slow-speed stability.

Step 3: The Steep Approach / "Dirty" Pass

- **Purpose:** To simulate a steep, noise-abatement approach or an approach into an airport with obstacles (like London City Airport).
- **Altitude:** Descending from 1000 ft to 200 ft over the show line.
- **Airspeed:** Similar to the low-speed pass, approx. 140-160 knots.
- **Configuration:** Landing gear down, full flaps.
- **Description:** The aircraft approaches the show line on a steeper-than-normal glideslope (e.g., 5-6 degrees instead of the standard 3 degrees). It flies directly over the crowd line, showcasing what a landing would look like, but then adds power and climbs out instead of touching down.

Step 4: The Low Approach / "Swoop" and Go-Around

- **Purpose:** The dramatic climax of the show. To give the impression of landing right in front of the crowd before powerfully climbing away.
- **Altitude:** As low as 50 feet AGL over the runway threshold.
- **Airspeed:** Final approach speed (Vref), e.g., 140 knots.
- **Configuration:** Landing gear down, full flaps, landing lights on.
- **Description:** The aircraft lines up with the runway in front of the crowd as if for a landing. It descends to a very low altitude (often just a few feet above the runway surface). Just as it seems it will touch down, the pilots advance the throttles to maximum takeoff power (TOGA - Takeoff/Go-Around), raise the nose, and initiate a climb. The sound of the engines spooling up to full power is immense.

Step 5: The Departure Climb / "Break"

- **Purpose:** A dynamic and energetic exit to conclude the demonstration.
- **Altitude:** Climbing through 500 - 1500 feet AGL.
- **Airspeed:** Increasing rapidly, 200+ knots.
- **Configuration:** "Clean" – Gear and flaps retracting shortly after initiating the go-around.
- **Description:** After the low approach, the aircraft climbs out. The pilots may perform a gentle wing-rock (a traditional salute) or a climbing turn away from the field to depart the airshow airspace.