RAF Brize Norton
Radar and Visual Circuits, and Procedural Instrument Approaches

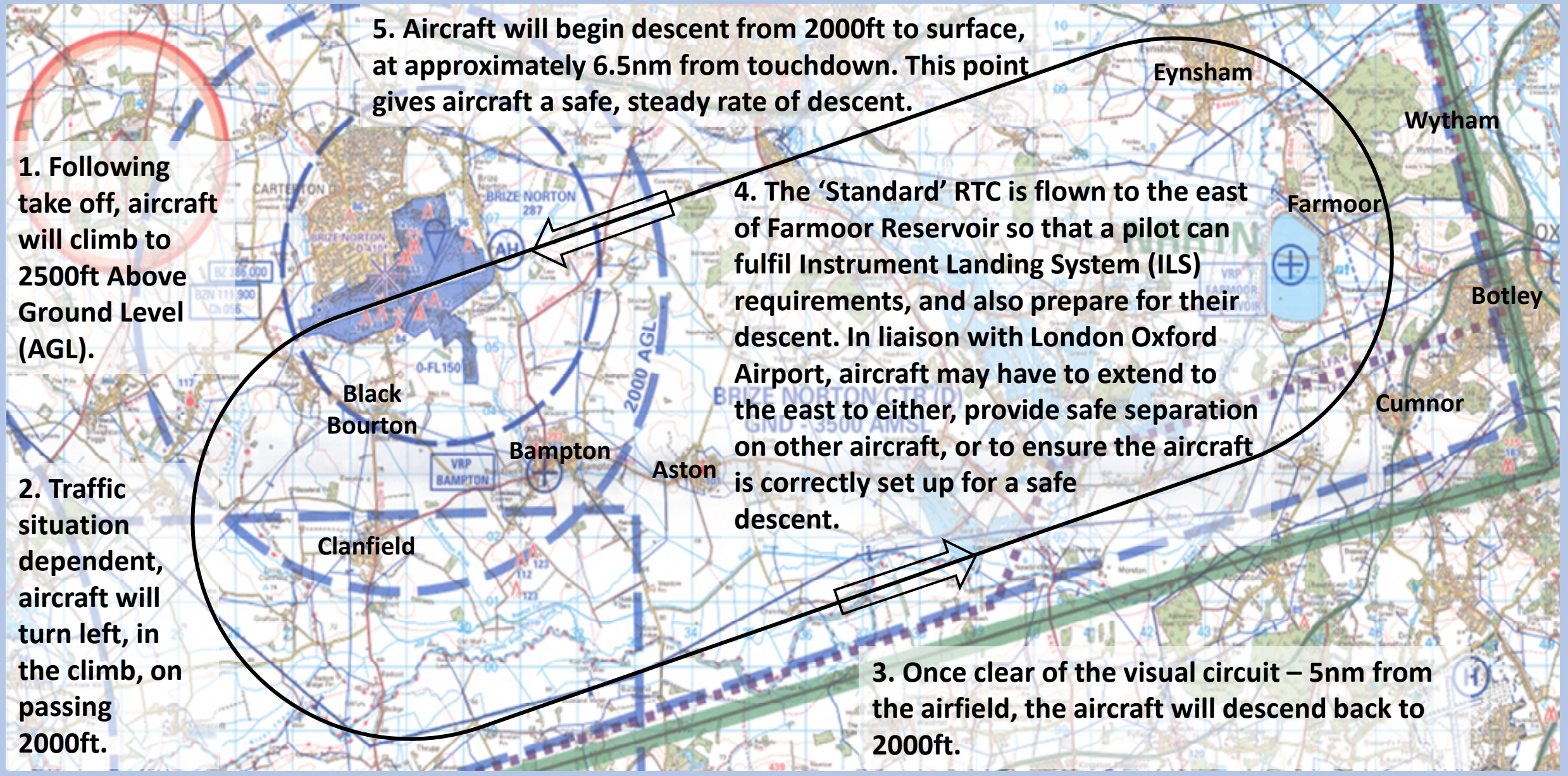
Radar Training Circuit and Procedural Instrument Approaches

- The RAF Brize Norton Radar Training Circuit (RTC) is a predetermined route for aircraft, providing standard recovery profiles. These have been designed and approved by Civil Aviation Authority registered Procedure Designers.
- The predetermined circuit facilitates the safe and effective flow of air traffic.
- Aircraft will be instructed to turn/descend at given points, in order to safely land at Brize Norton.
- It is routine for aircraft to conduct training sorties which require repeated use of the RTC; pilots require training in order to practice skills in the live environment and to maintain currency in many legally required competencies. Use of the RTC is also required when pilots convert to fly a different aircraft type.
- Although altitudes and turning points are fixed, on occasion these will be amended by Air Traffic Control (ATC) in order to maintain safety, ensure expedition, or in the event of an emergency. The turn and descent points may also change due to weather.
- The circuit, or pattern, is designed to ensure aircraft remain within the confines of Brize Norton's controlled airspace. This airspace is designed to provide protection to the passenger aircraft arriving/departing Brize Norton. The controlled airspace also provides a known traffic environment; this means that any aircraft wishing to transit the airspace, must be in contact with RAF Brize Norton ATC.
- Civilian aircraft can also request to make radar approaches to Brize Norton; the Ministry Of Defence encourages positive partnerships with local flying communities.

Radar Training Circuit and Procedural Instrument Approaches Continued

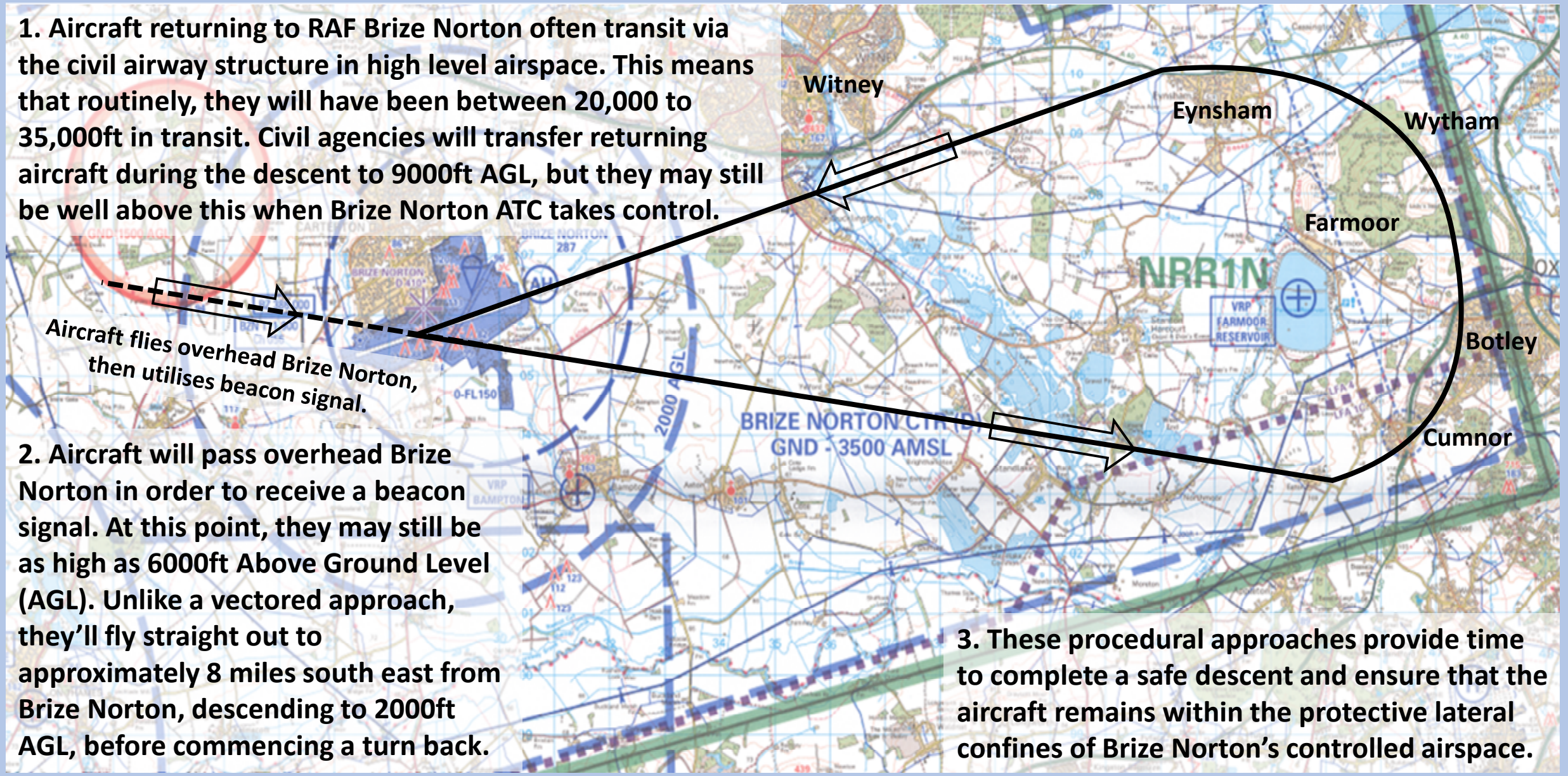
- Short Pattern Circuits are an emergency procedure, but may be flown for pilot/controller currency, training or operational necessity. As they shorten the length of the standard circuit, the number of approaches that can be flown may be increased. This aids achievement of regulatory mandated pilot/controller currencies, or can provide additional endorsement opportunities to controllers. However, they are not flown routinely because:
  - The aircraft flies at the same altitude as aircraft in the visual circuit, potentially introducing a conflict.
  - They significantly increase the cockpit workload for the pilot.
  - They reduce the preparation time a pilot has to complete checklists before their descent to land.
  - They do not meet all of the routine training requirements of ATC and aircrew.
  - They are predominantly an emergency procedure.
- Aircraft either fly vectored or procedural approaches. ATC direct when an aircraft should turn during a vectored approach. However, procedural approaches have turns that are determined by a pilot reviewing the position of their aircraft, relative to certain navigational aids.
- Aided approaches can be flown procedurally, the aircraft utilising a ground beacon (TACAN or NDB) to know when to turn and descend. Pilots must fly these in order to ensure a steady rate of descent and aircraft flying such approaches are often extremely high when handed over from civilian ATC agencies to RAF Brize Norton ATC. Pilots must also practice procedural approaches in preparation for when they fly into international airports and overseas aerodromes.

Runway 25 Radar Training Circuit (RTC)



Runway 25 Procedural Instrument Approaches

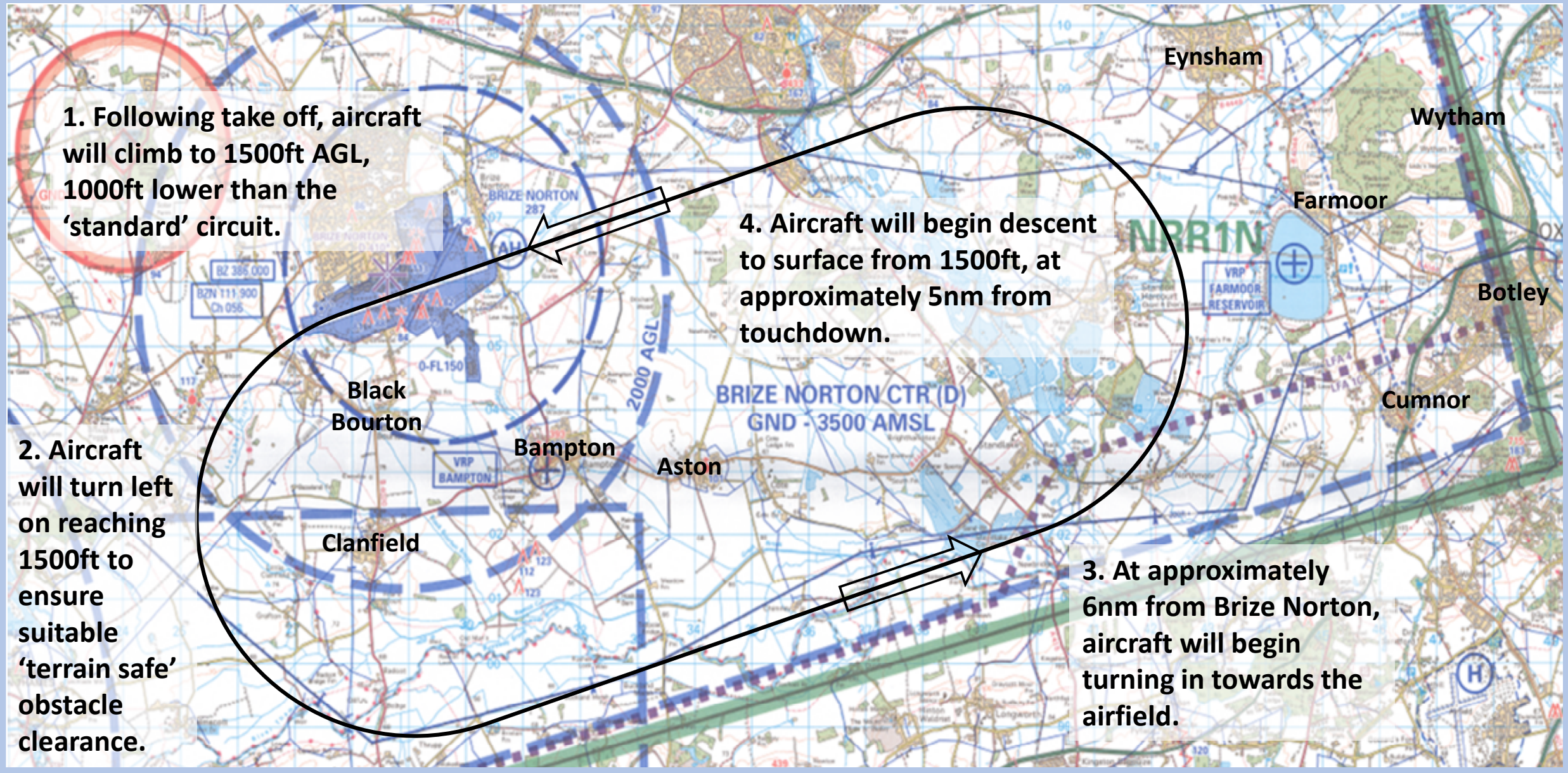
1. Aircraft returning to RAF Brize Norton often transit via the civil airway structure in high level airspace. This means that routinely, they will have been between 20,000 to 35,000ft in transit. Civil agencies will transfer returning aircraft during the descent to 9000ft AGL, but they may still be well above this when Brize Norton ATC takes control.



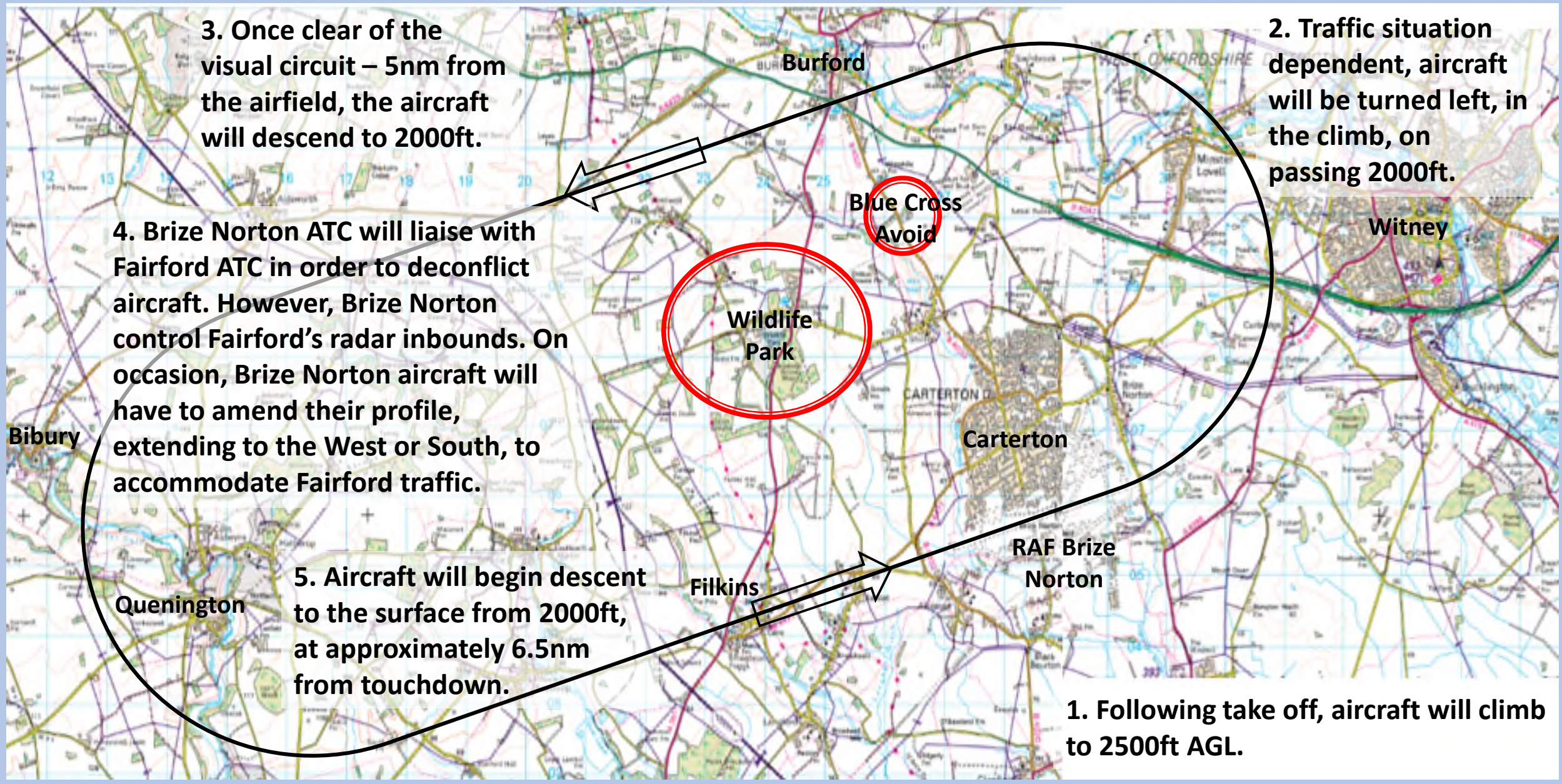
2. Aircraft will pass overhead Brize Norton in order to receive a beacon signal. At this point, they may still be as high as 6000ft Above Ground Level (AGL). Unlike a vectored approach, they'll fly straight out to approximately 8 miles south east from Brize Norton, descending to 2000ft AGL, before commencing a turn back.

3. These procedural approaches provide time to complete a safe descent and ensure that the aircraft remains within the protective lateral confines of Brize Norton's controlled airspace.

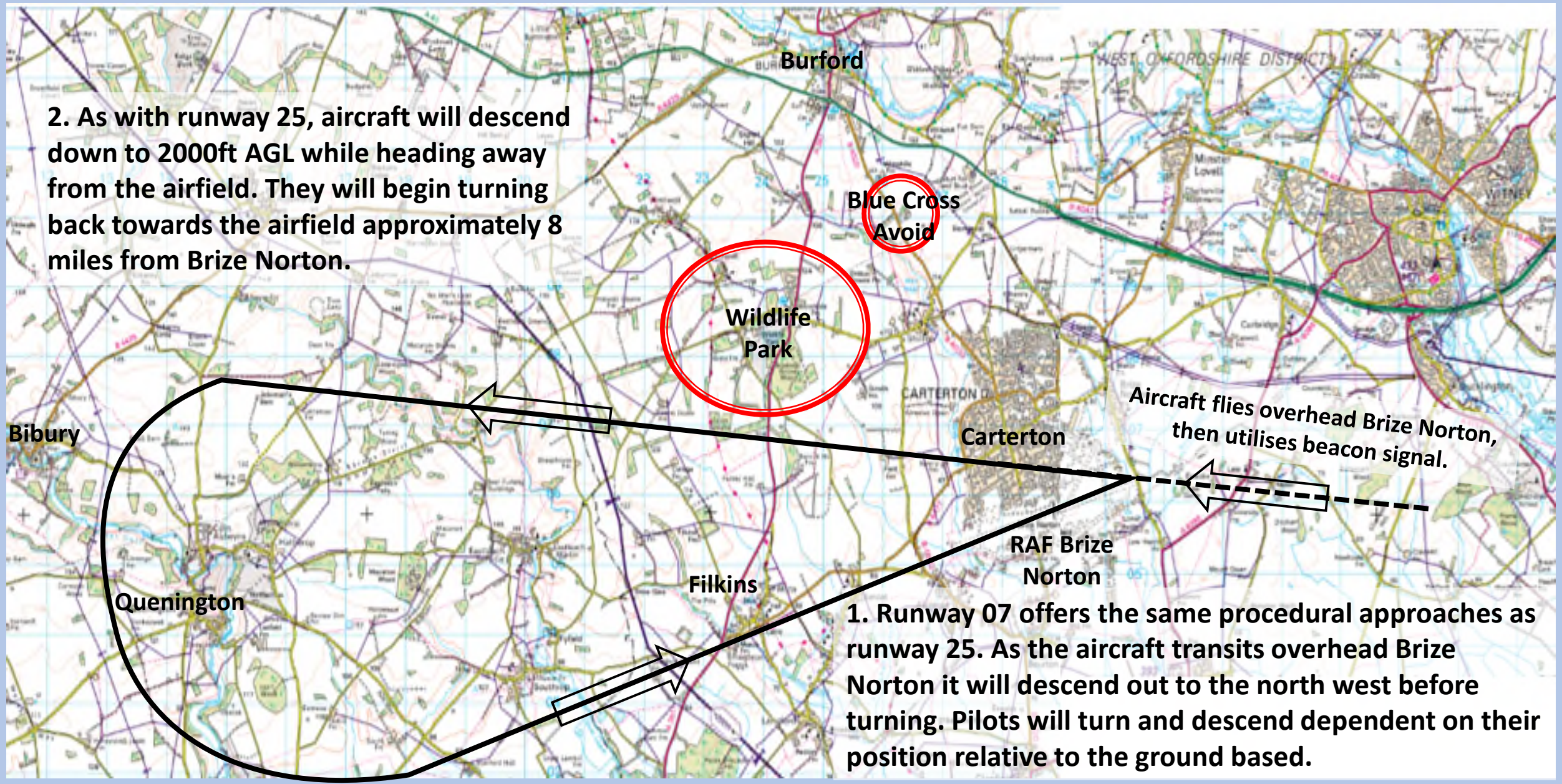
Runway 25 Short Pattern Circuit



Runway 07 Radar Training Circuit (RTC)



Runway 07 Procedural Instrument Approaches



2. As with runway 25, aircraft will descend down to 2000ft AGL while heading away from the airfield. They will begin turning back towards the airfield approximately 8 miles from Brize Norton.

1. Runway 07 offers the same procedural approaches as runway 25. As the aircraft transits overhead Brize Norton it will descend out to the north west before turning. Pilots will turn and descend dependent on their position relative to the ground based.

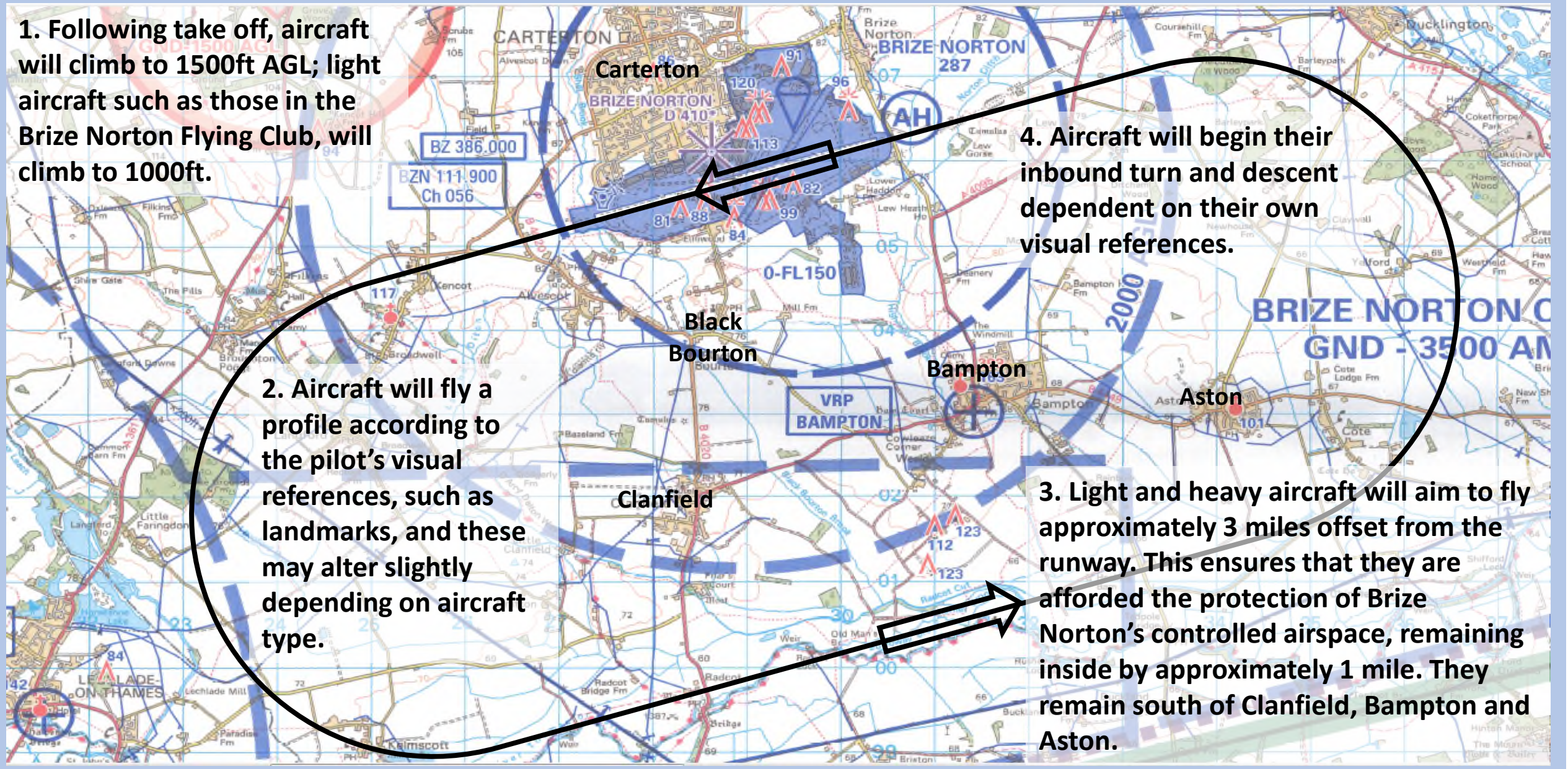
Visual Circuit

- Aircraft fly the Brize Norton visual circuit on return from dedicated UK training sorties or as a Base Training sortie.
- Pilots will only fly when certain visual criteria are met, therefore the visual circuit will often be closed when weather or visibility are poor.
- Visual recoveries and departures are permissible when the visibility is 5000m or greater; or the base of cloud layers is 1500ft or higher. While recoveries/departures may be suitable for Visual Flight Rules, ATC are authorized to declare the visual circuit unfit for use if they consider weather conditions are unsuitable (for example, too much cloud which is yet to be observed and reported by the Met Office).
- Due to variances in speed and aircraft performance, the length of the visual circuit flown will differ according to aircraft type, but the overall profile (northside/southside or right/left-hand) will remain the same.
- The flightpath may also vary due to wind or other factors, but they remain as generic flightpaths.
- Routine altitudes may be adjusted due to the volume of traffic in the airspace.
- Station based heavy aircraft and Brize Norton Flying Club light aircraft fly approximately 3 miles offset from the runway. This ensures that they remain at least 1 mile inside Brize Norton’s controlled airspace, providing protection from general aviation such motor-gliders.

Visual Circuit Continued

- Due to ‘slant ranges,’ an aircraft’s flight profile or position will appear different when viewed on the ground compared to where the aircraft would be if viewed from directly above and overlaid on a map.
- Pilots have Standard Operating Procedures and Orders detailing areas where they must not directly overfly for noise abatement; the Cotswold Wildlife Park, Clanfield, Bampton and Aston are just some of these areas.
- Similarly, Blue Cross has a helicopter specific avoid due to their unique operating environment.
- Civilian aircraft can also request to make visual approaches to Brize Norton; the Ministry Of Defence encourages positive partnerships with local flying communities.

Southside Visual Circuit
(Runway 25 Lefthand / Runway 07 Righthand)



Northside Visual Circuit
(Runway 25 Righthand / Runway 07 Lefthand)