

# Future Automotive Speed and Technology (F.A.S.T) Zone Aviation Operational Implications

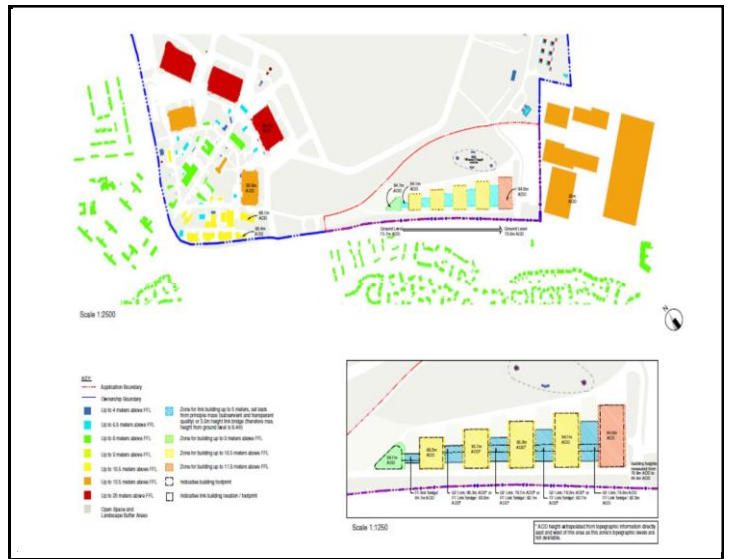
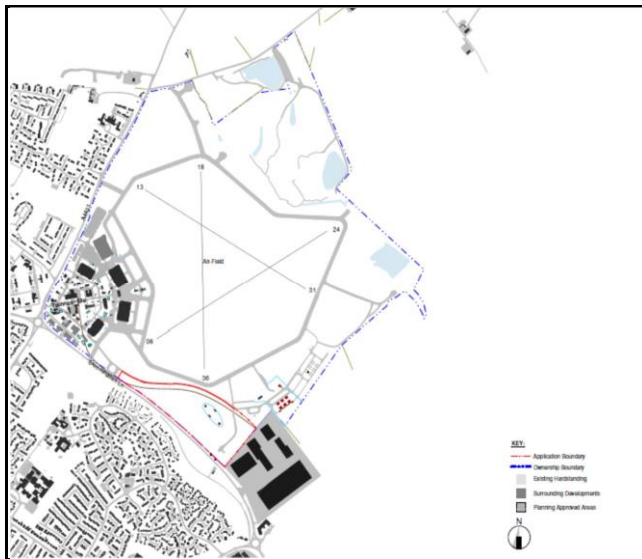
Bicester Motion is committed to creating a unique destination celebrating past, present and future of both automotive and aviation. Inherent to this vision and concept is a safe, sustainable and thriving aviation community at the airfield. The Future Automotive Speed and Technology (F.A.S.T) zone development site has been selected and the buildings designed for continuation of aviation activities. As part of the planning submission the development has been independently tested for operational implications in a report by Alan Stratford and Associates Limited ('The Stratford report'). This found the development would enable continuation of current operations at Bicester. This statement will provide an overview of the report approach, findings and operational capability implications.

## Context

The proposed location of the F.A.S.T. zone is on the south of the airfield area, between the perimeter track and Skimmingdish Lane, see Figure 1. This figure also shows the relation to the three main operating take-off and landing tracks (Runways 06/24, 13/31 and 18/36). The F.A.S.T. zone consists of several linked buildings of varying heights, from 9m metres up to a maximum of 11.5 metres. It should be noted that the tallest airfield hangars, the 'type C' hangars, are up to 16 metres in height, and adjacent neighbouring industrial buildings on the southern airfield boundary are up to 13.5 metres in height, as shown in figure 2.

Figure 1. Bicester Airfield – Location of proposed F.A.S.T. zone

Figure 2. Bicester Airfield – Proposed F.A.S.T. zone representative building heights



The bulk of the airfield's movements are currently made by gliders. Some of these flights are launched by a powered tug aircraft, although the majority are launched by winch operations parallel to each runway, which are intended to be within the perimeter track. Established Aerodrome procedures are in place which allow gliding to operate safely alongside other aviation activities, both for visiting aircraft and dedicated airfield operators.

The three nominal 'runways' or operating directions (not marked) of direction 060/240, 130/310, and 180/360 degrees respectively, are each 1,000 m (3,281 ft) long. These take-off and landing runs are normally utilized – although any part of the grassed airfield within the perimeter track can currently be used.

The prevailing wind in the Bicester area is predominantly from the South West, given these conditions, the majority, probably around 80 % percent, of take-offs and landings, including glider launches by winch, will be in the Runway 06/24 direction, which is predominantly into wind.

## **Operational Implication of the F.A.S.T Zone Development**

Based on its size, and the type of flying, Bicester Airfield is operated as 'Unlicensed'. This means that there are currently no Public Transport or Commercial Passenger Flights, or, Flying Training in aircraft above a specified weight. As such, Bicester Airfield conforms to safety guidance provided by the UK Regulatory body, the Civil Aviation Authority (CAA), in CAP (Civil Aviation Publication) 793 – 'Safe Operating Practices at Unlicensed Aerodromes'. Should an Aerodrome operate to the 'Licensed' standard, defined by the CAA, then the airfield must conform to certain physical, operational and safety requirements which are defined in CAP 168 – 'Licensing of Aerodromes'. The Stratford Report additionally considered operational implications of the F.A.S.T. development under the standards defined in CAP 168. Thus, providing conflation, when applying the most restrictive regulatory standard available. Specific focus was given to the obstacle clearance and any constraints on the usable runway lengths:

When CAP 763 is considered there are no stated requirements on the heights of obstacles or buildings around an airfield, apart from a recommendation that there are no obstacles greater than 150 ft above the average runway elevation within 2,000m of the runway mid-point. It is appreciated that in practice an obstacle close to or on the runway alignment could potentially impact on the usable length of the runway, subject to the performance of the aircraft involved. In these circumstances, it is ultimately the responsibility of the Aircraft Commander to ensure that the aircraft can operate safely at the airfield – although the airfield operator is expected to notify pilots of any obstacles or other safety issues in the relevant publications e.g. Airfield Operator Procedures / Operations Manual etc.

If CAP 168 is applied, then with the F.A.S.T. zone buildings there would be a small reduction in the take-off distance available (TODA) and landing distance (LDA) at the southern end of the 18/36 runway. Theoretically, a small reduction of around 60m-80m in the take-off distance available on the R18 runway and a corresponding reduction in the landing distance available on the R36 runway. However, the retained overall length available would be more than sufficient for the types of powered aircraft currently using the airfield and for glider operations by winch or aerotow in a R18 direction.

## **Conclusion**

Flight operations on the predominantly used R06/24 and the R13/31 runways are unaffected by the F.A.S.T development, so the take-off and landing distances on these runways are unaltered.

When considered against the standards of CAP 168 and guidance of CAP 793, the proposed F.A.S.T zone will not prevent continued operations on runway 18/36, having regard to the aircraft currently flown. As an unlicensed airfield Bicester conforms to the guidance stated in CAP 793 – 'Safe Operating Practices at Unlicensed Aerodromes', which would have no operational implications. However, Bicester Motion intends to engage with existing airfield operators to consider an operational procedural modification by reduction in the length of runway 18/36, to achieve a reduction in operational risk for users.

The development of the F.A.S.T. zone as proposed would have no impact on current airfield operations at Bicester. Therefore, there is no reason why, from an aviation standpoint, planning consent for this development should not be given.

## **Source Documents:**

1. Operational implications of the proposed F.A.S.T. (Future Automotive Speed and Technology) zone at Bicester airfield By Alan Stratford and Associates, November 2019.
2. UK CAA Civil Aviation Publication CAP 168: Licensing of Aerodromes.
3. UK CAA Civil Aviation Publication CAP 793: Safe Operating Practices at Unlicensed Aerodromes.