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# Rufous™ and Operations in Civil Airspace

## General

This briefing note is based on the Civil Aviation Authority's CAP 722: Unmanned Aircraft System Operations in UK Airspace - Guidance (Fourth Edition - 6 April 2010). It is provided for information purposes only and must not be taken as authoritative guidance of the use of a Light (>20Kg but ≤150Kg) Unmanned Aerial Vehicle in UK airspace. The sequence follows the format of CAP 722.

As a result of the operating mass, Rufous™ is exempt from European Aviation Safety Agency (EASA) Regulations and Implementing Rules (IR). As a consequence, it falls under national regulation, which is undertaken by the MOD for military operations and the CAA for all other operations, including state UAV such as the police, customs or other similar services. EC Regulations do require that Rufous™ operators will need to hold minimum levels of insurance. Whilst current UAS insurance offerings are limited, as interest builds in the emerging technologies it is anticipated that market offerings will grow.

It should be noted that the terminology for describing UAS operations continues to evolve, and some terms used by the military are not necessarily applicable to UAS that are subject to civil regulations. CAP 722 should be consulted for the latest position.

## Policy

The Air Navigation Order (ANO) is the UK Legislation designed to enable the safe and efficient operation of manned aircraft in all classes of airspace. UAS operators must work within the same framework; UAS have no automatic right to segregated airspace. When operating outside of segregated airspace with no Approved Sense and Avoid system a UAS shall only be flown:

- Below 400ft above ground level;
- Within visual range of the operator(s) of the said aircraft (max 500m);
- In daylight (30 mins before sunrise to 30 mins after sunset).

In addition, the following constraints can apply:

- In controlled airspace with the permission of the appropriate Air Traffic Control Unit (ATCU);
- In any aerodrome traffic zone with the permission of the appropriate ATCU or the person in charge of the aerodrome;
- Avoiding direct over flight of any congested area of a city, town or settlement, and with a lateral separation of a minimum of 150m;

Rufous™ is, however, exempt from the need to carry a SSR Mode S transponder for civil use.

The requirements for licensing and training of UK civil UAS pilots and commanders have not yet been fully developed by the CAA. As Rufous™ is as Class 3 semi-autonomous UAS, it can be anticipated that flight crew qualifications will be similar to a British Model Flying Association (BFMA) Category B (Helicopter) Certificate, although changes will necessarily be required as Rufous™ is a coaxial contra-rotating platform. In addition, as Rufous™ pilots and commanders are likely to need to enter areas that are under the control of an ATCU, they will need to hold a Flight Radio Telephony Operators' Licence (FRTOL) valid for the privileges intended to be exercised.

## Civil Operations

The ANO does not require that UAS operations take place from aerodromes licensed by the CAA.

Due to the platform's mass and performance, Approval to Operate with further exemptions from the ANO and Rules of the Air should enable Rufous™ to complete many of the foreseen missions with minimal requirement for segregated airspace.

A Certificate of Airworthiness or Permit to Fly will be required for a Light UAV to operate in the UK; Rufous™ meets the criteria for the CAA's "Light UAV Systems" policy whereby certification can be considered following the presentation of evidence to standards in line with the "CAA Over 20Kg Model Aircraft Scheme". Each configuration of Rufous™ will need to be assessed to ensure that it continues to meet any approvals that have already been granted.

Continuing airworthiness requirements, including maintenance operations will need to be in accordance with the requirements that currently apply to civil aircraft. Organisations undertaking these tasks will be required to hold appropriate approvals and licences.

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