CANNON DYNAMICS

SWORD

Advanced Surveillance / Sensor / Cargo UAV

- Twin Wing
- Multiple Propulsion Methods
- VTOL Option
- Extreme ISR
- High Endurance

CANNONDYNAMICS.CO.UK

What is the CANNON SWORD?

CANNON SWORD is a multi role, modular flying system, designed for challenging missions, designed to meet the challenges of military missions and civil operations around the world.

Easily deployed and operated with automated flights and deliveries. Massive payload sensor / gimbal capability and rapid 'swap or drop' of load containers.

Twin Wing design removes the need for a tail, which traditionally pushes down to balance the forward Centre of Gravity (CoG). This negative force can reduce lift by up to 20% and is a constant inefficiency, reducing payload capacity, increasing drag and fuel consumption and challenging stability.

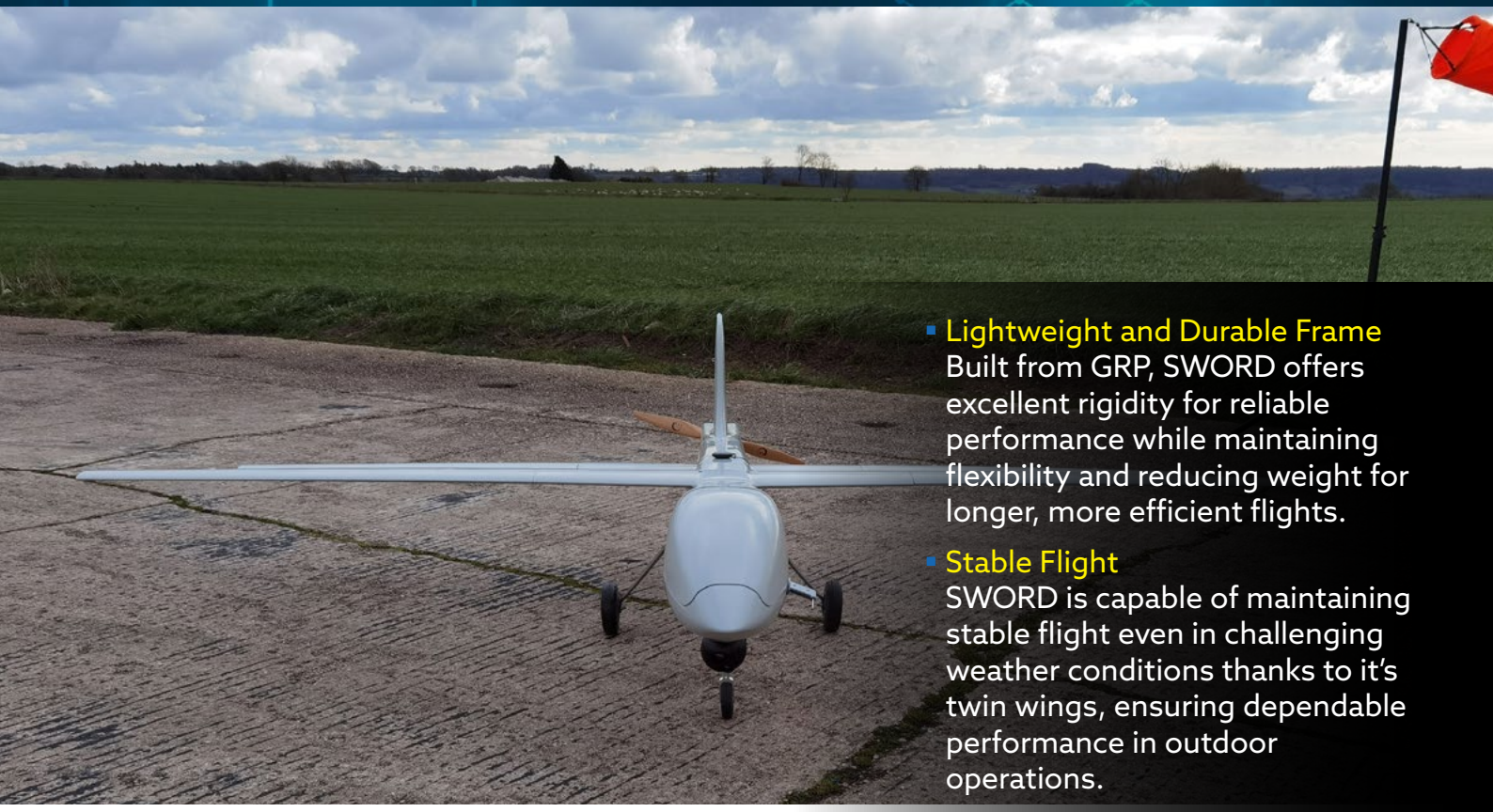
Two wings relocate the CoG balance point between the front and rear wings. This more central balance point greatly improves stability. Control surfaces provide double corrective force and redundancy. Safety is thus greatly enhanced!

Twin wings are shorter, like for like, for safer manoeuvering and reduced wing stress. Shorter wings reduce the tipping moment of wind gusts providing improved stability and further reduction of stress to the airframe. Fatigue of the structure is reduced, improving safety and extending operational life.

SWORD 30-30

SWORD 60-60

KEY FEATURES



- **Lightweight and Durable Frame**
  Built from GRP, SWORD offers excellent rigidity for reliable performance while maintaining flexibility and reducing weight for longer, more efficient flights.
- **Stable Flight**
  SWORD is capable of maintaining stable flight even in challenging weather conditions thanks to it's twin wings, ensuring dependable performance in outdoor operations.

Featuring multiple propulsion options, SWORD is a high endurance, stable, fixed wing aircraft.

SWORD is adaptable for a diverse range of applications that require both flexibility and endurance.

SWORD 30-30

Advanced Surveillance / Sensor / Cargo UAV

10hrs +

Flight Duration

10hrs +

Flight Duration (payload)

10kg +

Payload capacity

SWORD 30-30

The SWORD 30-30 is a versatile Twin Fixed Wing with Canard UAV with long endurance and flight times.

SWORD is powerful and efficient with great flight characteristics and long endurance.

Versatile and able to carry a range of payloads over long distances, SWORD is adaptable to a range of missions.

1000km +

Range

3.0m

Wingspan

SWORD 60-60

Advanced Surveillance / Sensor / Cargo UAV

24hrs +

Flight Duration

SWORD 60-60

The SWORD 30-30 is a versatile Twin Fixed Wing with Canard UAV with long endurance and flight times.

SWORD 60-60 shares many of the great features of its smaller sibling but boasts a greater wingspan, flight duration and payload capacity.

24hrs +

Flight Duration (payload)

15kg +

Payload capacity

1000km +

Range

6.0m

Wingspan

Features

- Portable, easily handled equipment. Transported and protected in convenient carrying cases
- Large capacity fuselage, ultra-long missions or large payloads as required
- Very low magnetic signature for magnetic surveys / mapping or stealthy surveillance
- Dual redundant control surfaces for extreme reliability
- Electric or EFI Internal Combustion Petrol 4-stroke pusher engines
- Efficient twin wing design promoting more lift as wing loading is halved giving long flight duration, halving the wingspan compared to a traditional monoplane
- The VTOL Co-Ax version Combined with a hybrid power system this versatile UAV becomes a 'Quad' drone platform at the flick of a switch. Launcher versions also available along with STOL and STOVL
- Ultra-long flights > 24 hours, bringing large UAV performance to commercial users, BVLOS and Aircraft DAA capabilities to suit the client's mission objectives

Specifications

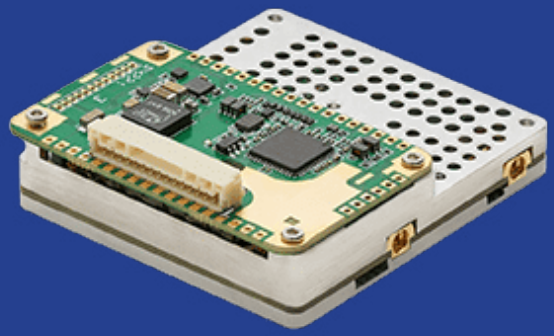
Model	SWD-30-30 Electric	SWD-30-30 Internal Combustion Engine (ICE)
Frame Length	3200mm	3200mm
Wingspan	3000mm twin	3000mm twin
Frame Weight	12kg	12kg
Take off Weight	22kg +	22kg +
Frame Material	GRP	GRP
Propulsion	Electric / Twin Electric (VTOL Option)	4 stroke EFI
Flight Time	10hr	10hr
Payload	10kg	10kg
Max Flying Speed		

Model	SWD-60-60 Electric	SWD-60-60 Internal Combustion Engine (ICE)
Frame Length	3600mm	3600mm
Wingspan	6000mm twin	6000mm twin
Frame Weight	18kg	18kg
Take off Weight	35kg +	35kg +
Frame Material	GRP	GRP
Propulsion	Electric / Twin Electric (VTOL Option)	4 stroke EFI
Flight Time	24hr +	24hr +
Payload	15kg +	15kg +
Max Flying Speed		

Radio

High quality radio communications ensure a responsive and stable flight

Secure and reliable radio communications



A wide range of multi-band and single-band radios

Low Latency

Low latency, designed for reliable, long-range applications with real-time, immediate information from nodes.

Resilient Network

Built-in spectrum scanner that monitors in-band interference and provides automatic band and channel switching capabilities.

Fine-tuned filtration and frequency-band shifting techniques are designed to minimize noise and block out-of-band signals.

With an advanced interference-avoidance feature-set, can even automatically switch to cleaner channels and bands of operation.

Multi-Cast Video

In a point to multipoint configuration, provides the ability to stream high quality video to multiple receiving nodes, from drones to numerous stakeholders on the ground.

Cannon SmartEye

Single, Dual or Triple-sensor gimbal cameras

10x to 80x Optical Zoom
Up to 32x Digital Zoom
Thermal imaging options
AI Object Tracking and more ...

SWORD can be fitted with a range of Cannon SmartEye cameras featuring single or multiple sensors, low-light vision, IR and thermal vision, tracking and more.

All cameras are gimbal mounted, packages range from under 200g to around 2kg.

Powerfull Zoom Functions

10x Optical zoom (up to 80x available)
32x Digital zoom

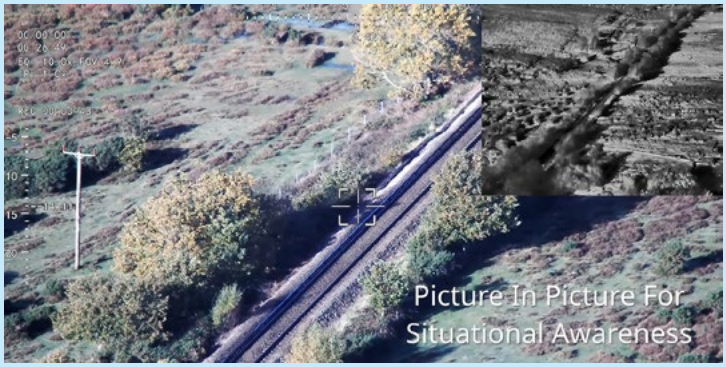
AI Onboard Tracking

Identifies objects of interest using onboard AI tracking abilities

With one click the camera follows the object as both it and the aircraft move, the aircraft can be set to automatically fly to keep the object in view.
Many gimbal options and targeting are available to suit mission needs.

Picture in Picture

Identifies objects of interest using onboard AI tracking abilities



IR / EO Cameras may be used simultaneously to view scenes in both thermal and natural light, the zoom on the EO camera gives excellent details of targets from several km. The IR view makes it easy to detect hidden heat sources in undergrowth or at night.

Low -light Operation

Identifies objects of interest using onboard AI tracking abilities

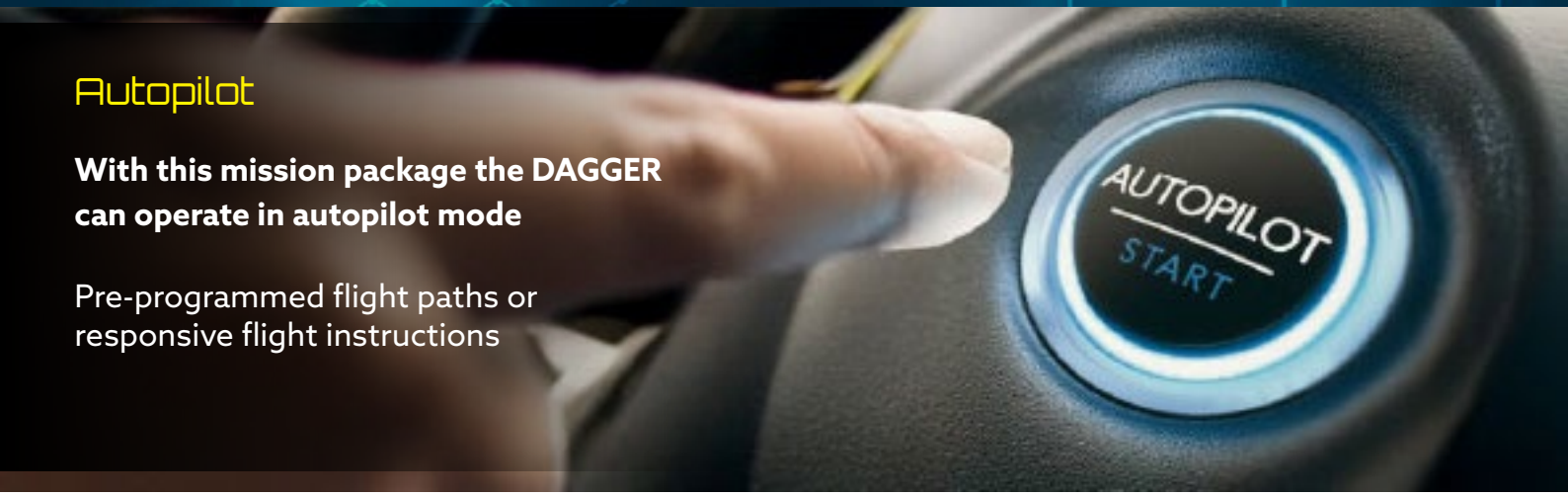
IR and Low light modes, In low light conditions the EO camera goes into 'starlight' mode – it can see much better than the human eye at night, combine this with Infra-Red mode and the scene is clear, objects and targets may easily be seen at long range.

Infra-Red / Thermal

Selected models feature full infra-red and thermal vision capabilities

Features and Benefits

- SD card support



Autopilot

With this mission package the DAGGER can operate in autopilot mode

Pre-programmed flight paths or responsive flight instructions

Multiple autopilot systems are available

Options vary between full 'remote pilot in control' through fully autonomous autopilot options. A choice of various Autopilots and Flight Controllers are offered to suit customers' needs; from low-cost commercial to full military specification GNSS, denied mission capable systems.

Typical Features

Three Inertial Measurement Units (IMU) within the UAV autopilot system.

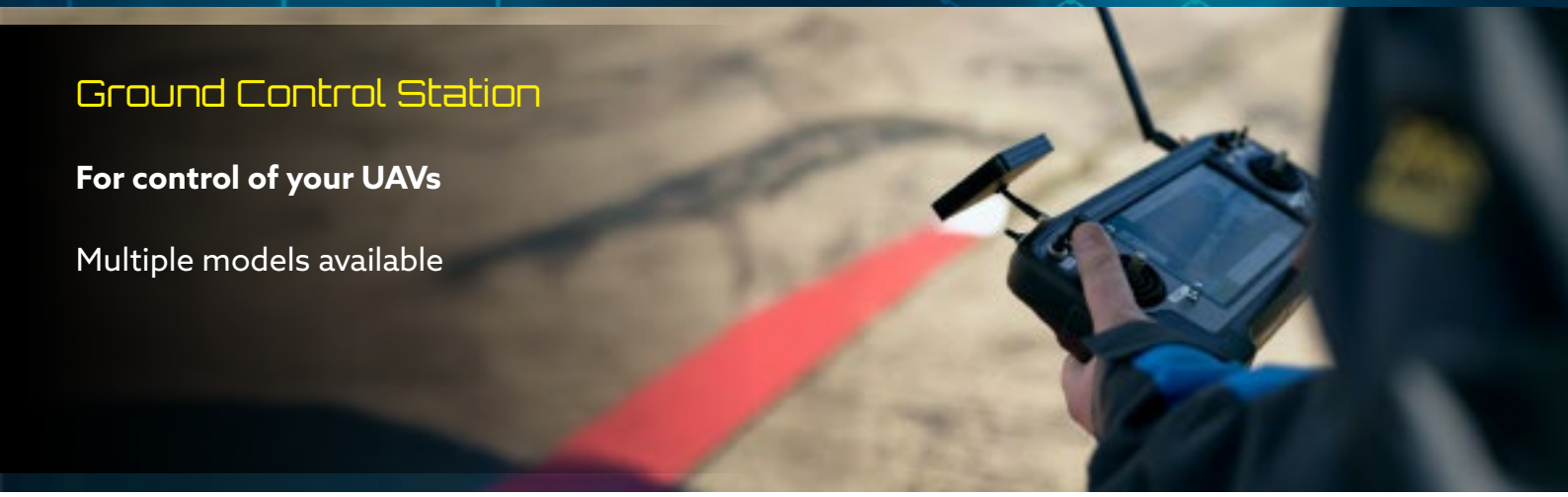
IMUs comprise a suite of sensors used in the Inertial Navigation System (INS).

Measuring orientation, velocity, and gravitational forces to aid navigation and control using the raw IMU measurements and sensors for extra redundancy.

The entire Flight Management Unit (FMU) and Inertial Management Unit (IMU) are housed in a small form factor housing.

Possibility to integrate alternate and multiple Global Navigation Satellite Systems (GNSS) from GPS (USA) and Galileo (EU) are available.

Clients preferring GLONASS (Russia) or BeiDou (China) can be accommodated.



Ground Control Station

For control of your UAVs

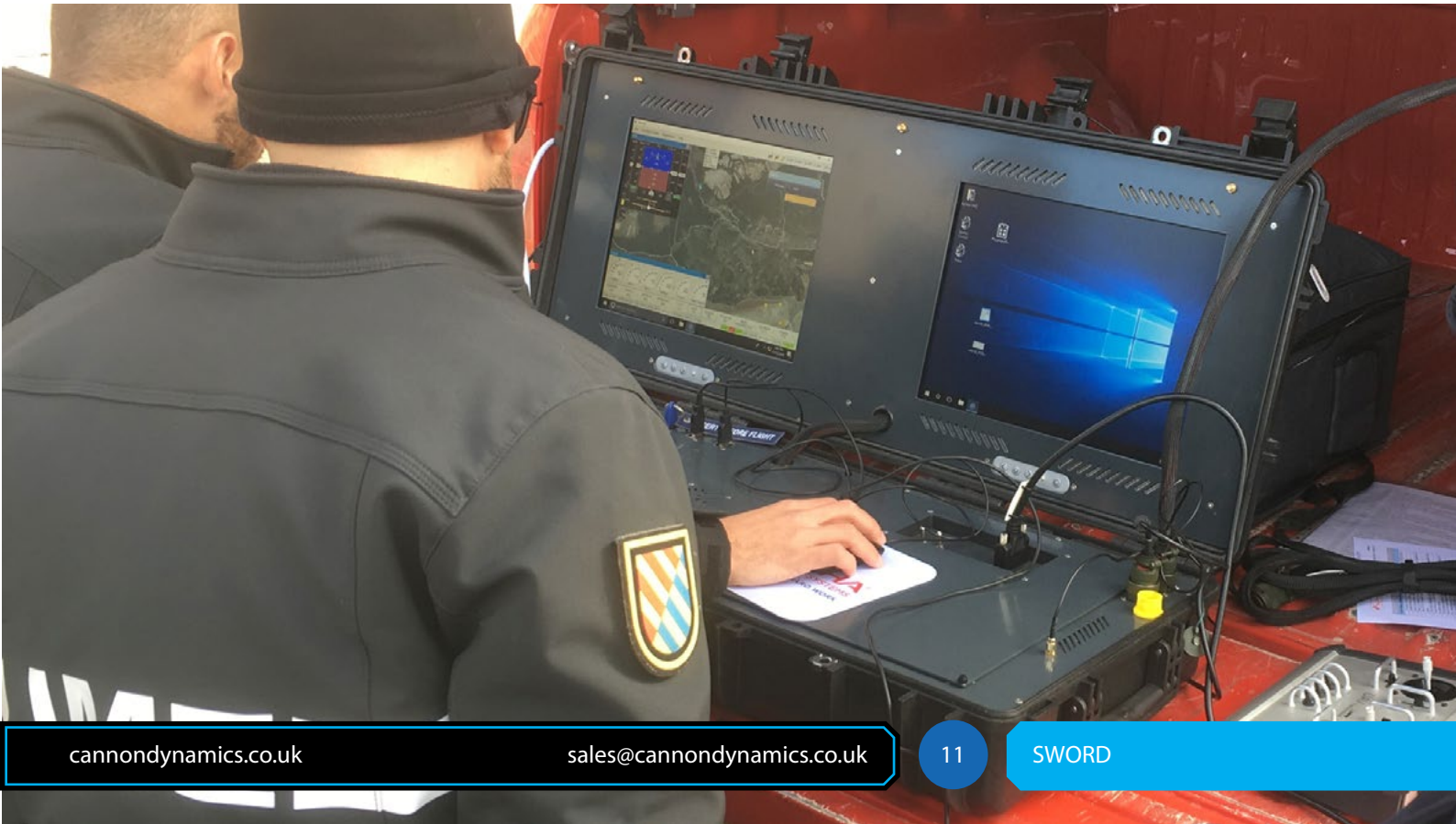
Multiple models available

From a simple laptop or android handset to a full 40-foot container based mobile command and control center - Cannon Dynamics can provide a system that suits your needs

The Cannon Technologies Group has been making Command and Control rooms for 40 years and has a wealth of experience in providing cutting edge data platforms in the most extreme of environments.

A Basic Configuration includes the components necessary for mission planning, control battery replacement and charging facilities, field level configuration changes, level maintenance and repair solutions including the necessary tools and spares.

Further configurations include anything from generators to operator basic accommodation to airconditioning if required and is completely scalable to the desired deployments.



Cannon Dynamics Ltd
Queensway
New Milton
Hampshire
BH25 5NU
UK

sales@cannondynamics.co.uk

CANNONDYNAMICS.CO.UK