The Sentinel Longreach 70 UAV Powered by RCV

RCV DF70LC enables class leading vehicle performance

Sentinel Unmanned set themselves the challenging design brief to engineer a small unmanned aviation system (sUAS) which is both innovative and class leading:

It was decided that the system must be small, long ranged, capable of running on heavy fuel and rotary winged to allow the ability to hover in a single position.

In addition, the platform must be capable of carrying a large payload

Certain factors were also important to the brief:

•Remote starting capability using heavy fuel

•The system must be able to generate onboard power to ensure that a wide range of sensors and equipment can be used

•The system must be capable of use in all situations, including hostile climate & terrain as well as marine environments

"By building our Longreach design around the RCV DF70LC unit we have achieved a sUAS with class leading capabilities in load, range and multi-fuel operation"

Sentinel unmanned

Max payload

6kgs

Max Endurance

8 hours

Multi-fuel operation

JP5/JP8/Gasoline

RCV®

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The Sentinel Longreach 70 UAV Powered by an RCV Engine

From the start of the project Sentinel worked closely with the RCV team to understand the requirements fully and develop a specification that would allow the design goals to be met

The engine that was chosen is the RCV 70cc twin cylinder liquid cooled unit (DF70LC) as it offers excellent power to weight ratio, a liquid cooling system and gives the ability to operate using heavy fuel

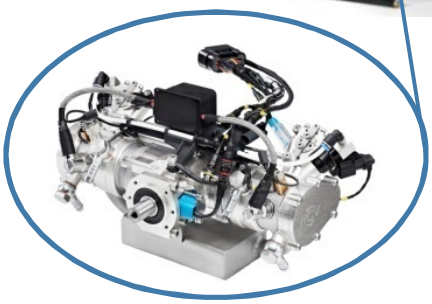
The airframe was designed in close co-operation with RCV to optimise the engine integration process

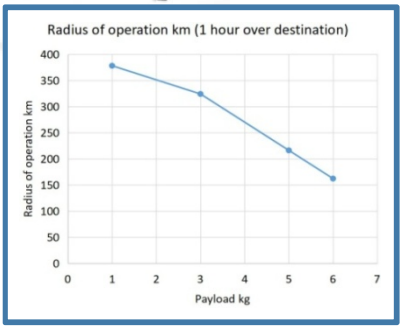
- The patented rotary valve system gives excellent mixture preparation and allows the use of heavy fuel without any measurable power loss
- Proven remote starting using multiple fuels including heavy fuel (JP5/JP8/Jet A1 etc.)
- The engine starts easily on all specified fuels in all conditions thanks to the inbuilt heaters, central spark plug position and efficient combustion system
- Long MTBO. Up to 150 hours for rotary wing
- The superb starting characteristics mean that the engine works well in all ambient conditions and altitudes

ADDITIONAL BENEFITS

Max Take-off Weight	30 Kg
Aircraft Tare Weight	16 Kg
Max Indicated Airspeed	75 Knots / 139 Kmh
Fuel Capacity	10 Litres
Fuel Consumption at Hover	2 L/Hr
Fuel Consumption at 60 Knots	1.5 L/Hr
Max Endurance	8 Hrs
Max Endurance Hover	6 Hrs

Calculated Endurance (ISA Conditions, AMSL, Kerosene Fuel)	8hrs	7hrs	5hrs	4hrs
Payloads (Kgs)	1	3	5	6
Calculated Endurance - 100% Hover (ISA Conditions, AMSL, Kerosene Fuel)	6hrs	5hrs	4hrs	3hrs
Payloads (Kgs)	1	3	5	6





Small and Compact	✓
Remote Starting	✓
Long Range - Fuel Efficient	✓
Heavy Fuel Running	✓
Rotary Wing	✓
Large Payload	✓
Generate Onboard Power	✓
Multi-Environmental Use	✓
Reliable and Low Maintainance	✓

The Longreach platform is now one of the leading sUAS on the market. This would not have been achieved without the RCV engine. We have been able to fulfil all items on the original design brief and more

The collaboration with RCV has proved invaluable to the success of the project

"Now that we have used the RCV engine we would not hesitate in recommending it for use in other platforms"

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