

# Job Specification

---

## Mechanical Design Engineer

<b>Responsible to:</b>	Head of Engineering
<b>Grade of post:</b>	Senior/Scientist
<b>Salary:</b>	To be agreed
<b>Hours of work:</b>	37 hours per week
<b>Work location:</b>	Oakley, Bedford/Hybrid Working

### Role Purpose

Is to support Head of Engineering on multidisciplinary design challenges involved in the development of unmanned systems. This represents an exciting opportunity to provide technical leadership of innovative products including requirement management, design, integration, manufacturing and testing.

### Key Responsibilities

- Day-to-day CAD design and management of multidisciplinary design requirements, not only structural or mechanical, but also involving aerodynamics, electronics, software and flight trials.
- First-pass analysis (basic FEA, basic CFD) of implementable design solutions using analysis suites as part of CAD packages (preferably Solidworks).
- Serve as a technical lead on project Work Packages (WPs). Technical management of specific project WPs including task allocation and resource management.
- Define the design, integration and test activities during development of both R&D and product contracts.
- Product design innovation, based on research into technical plans for prototypes using Computer Assisted Engineering (CAE) and Computer Aided Manufacturing (CAM) software.
- Select suitable manufacturing methods for rapid prototyping, incl. wet-layup for developmental composite parts.
- Preparing user requirements, concept of operations (CONOPS), technical specifications, design specifications, Bill of Materials (BoM) configuration control, product specifications, commissioning plans, DFMEAs and risk assessments.
- Payload integration, with understanding of impacts on aircraft performance and of holistic optimisation at aircraft design stage.

- All-Electric Propulsion System integration into new or existing airframes (incl. eVTOL)
- Understanding of customer requirements, challenges and expectations.
- Explore new technology trends and apply in appropriate scenarios to deliver value to team, customer and Organization.
- Work with wider project delivery teams to develop on-time, on-budget solutions.
- Technical Point of Contact and liaison for key Suppliers/Partners.
- Conducting timely reviews with team members on the work assigned and resolve if there are any issues / concerns on the deliverables.
- Ensure quality of deliverables to the satisfaction of the customer.
- Responsible for WP adherence to schedule, costs and review of risks.
- Assist Programme Manager in estimation, dependency identification, developing project plan and tracking the progress.

### **Other Duties and Responsibilities**

- To actively participate in Blue Bear's Performance Management Scheme.
- To undertake such other duties and responsibilities as may be reasonably required within the grade and level of the post.
- You will be expected to perform different tasks as necessitated by your evolving role within the company and the overall business objectives of the company. Some travel within the UK may be required.

### **What's in it for you**

- Work in a small, friendly company on the cutting edge of swarm autonomy.
- See your work in action flying on our own fleet of custom-built UAVs
- Hybrid working available
- Employee Assistance Programme
- Competitive Salary

### **Equality and Diversity**

We are committed to the promotion of equality of opportunity in all of our activities and to encouraging access to our organisation from all groups irrespective of the equality strands. We are working to create an environment in which cultural diversity and individual difference are positively valued in an atmosphere free from harassment and discrimination. We take our legal and moral obligations with respect to equal opportunities seriously and welcome dialogue with individuals on ways in which our equal opportunities policies and practice can be enhanced.

### **Health and Safety**

The organisation together with the assistance of all employees are fully committed to developing a positive safety culture.

We encourage and support employees becoming involved in and participating in health, safety and welfare matters. Our goal is to motivate and empower all employees to work safely and protect their long-term health, not simply to avoid accidents.

## PERSON SPECIFICATION

<b>Education/Qualifications</b>	<b>S/L</b>	<b>I</b>	<b>A</b>
<i>Essential:</i>			
• BEng/ CEng in Mechanical/ Aerospace Engineering	X		
• Proficient in CAD (ideally Solidworks), related CAE (FEA/ CFD) and CAM rapid prototyping	X		
<i>Desirable:</i>			
• MSc/ PhD in Mechanical/ Aerospace Engineering	X		
• Member of industry related Professional Body	X		
• Mechatronics and/or Robotics literate	X		
• Health and Safety qualification (IOSH or NEBOSH)		X	
• Understanding of DFMEA and risk assessment techniques in aerospace environment	X		
• Experience with Dstl and MOD	X		
• Qualifications on composite structure design, aerodynamics, electronics, firmware, software and flight trials	X		
• Training on multidisciplinary engineering disciplines and/or diverse skill sets	X		
• BMFA RC plane flying, basic Workshop hands-on skills		X	
<b>Knowledge and Experience</b>			
<i>Essential:</i>			
• Technical management of complex electro-mechanical systems	X		
• Payload integration (e.g. Optical, RF, DEW, etc)	X		
• Aircraft design methods and aircraft performance estimation	X		
• All-Electric Propulsion System integration (incl. eVTOL)	X		
• Customer and supplier management	X		
• Delivery, reporting and presentation of technical and experimental work	X		
• Appropriate IT Skills including full MS Office Suite	X		
<b>Personal/Behavioural Attributes</b>			
<i>Essential:</i>			
• Good analytical and communication skills	X	X	
• Strong technical leadership competencies	X	X	
• Attention to detail balanced with high process overview/ improvements	X	X	
• Confident and articulate with good communication skills	X	X	
• Excellent verbal and written communication skills	X	X	
• Excellent organisation skills	X	X	
• Excellent problem-solving skills	X	X	
• Able to work cross-functionally and collaboratively	X	X	
<b>Other Requirements</b>			
Subject to UK MoD security clearance vetting to a minimum SC level	X		

**S/L = Short Listing    I= Interview    A=Assessment**