






Personal details		Nicholas Baker	
		Mechanical Design Engineer/ Space Engineer	
		Profile	
	nickbaker64@yahoo.com	<p>Experienced and innovative Mechanical Engineer with full life-cycle experience from initial concept, through R&D, design, analysis, manufacture, test, installation and final hand-over, with good knowledge of RF, EMC, Electronics and Software. Additional Space experience at Systems Manager level, including the generation of a wide range of technical documents to ECSS requirements, and technically responsible for space flight qualification of Mechanisms used on a range of Spacecraft currently orbiting the Earth, Mars, and the Sun.</p>	
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Key Skills		Employment History	
Mechanical Engineer	● ● ● ● ● ●	Mechanical Design Engineer (contract) Ashtead Tech.	Sub-Sea
Systems Eng. (Space)	● ● ● ● ● ●	<ul style="list-style-type: none"> Mechanical and hydraulic design of large hydraulic assemblies used for underwater recovery operations. 	09/23 – 03/24 Home/ Aberdeen
3D CAD	● ● ● ● ● ●	Mechanical Engineering Manager MRT Ltd.	Robotics
Shock/ Vibration	● ● ● ● ● ●	<ul style="list-style-type: none"> Mechanical and mechatronic design of a fully autonomous self-charging robot that attaches to the side of a ship hull to remove algae, during operation, reducing fuel consumption, dry dock time-out and cross-contamination. 	01/23 – 06/23 Senglea Malta
RF Engineering	● ● ● ● ● ●	Mechanical Design Engineer (contract) 3-Sigma Designs	Mech Eng.
Analysis	● ● ● ● ● ●	<ul style="list-style-type: none"> Conceptual design of sub-sea robot for MRT Ltd. Design of a full suite of storage solutions for hospital use. Design of a high-end personal sanitary disposal unit. 	01/21 – 12/22 Home base
ECSS Documentation	● ● ● ● ● ●	Principal Mechanical Engineer	Space R&D
Hydraulics	● ● ● ● ● ●	<ul style="list-style-type: none"> Project Manager on two research programmes reporting to the Luxembourg Government and ESA. Space-based CFRP manufacturing system. Geolocation techniques including TDoA and FDoA. 	09/18 – 11/20 Luxembourg
EMC	● ● ● ● ● ●	Design Manager	Automation
Main Industries		<ul style="list-style-type: none"> Concept development and generation of sales material Design of fully automated manufacturing, assembly, Welding and material handling systems using robot arms. 	06/17 – 09/18 Manchester
Space		Space Engineer (contract) OIP Sensor Systems	Space Optics
Robotics		<ul style="list-style-type: none"> Design of very high precision optical components for PROBA satellites. Modal, Quasi-Static and Dynamic analysis Vibration testing and analysis of optical components 	06/16 – 04/17 Oudenaarde Belgium
Engines		Mechanical Design Engineer (contract) EDM Ltd.	Flight Sims
Satellite Communications		<ul style="list-style-type: none"> Mechanical design and stress analysis of 5-axis military Flight simulator which achieved an innovation award. Visualisation renderings of flight sim for customer 	02/16 – 06/16 Manchester
Automation		Project Engineer (contract) Didsbury Engineering	Mech Eng.
Software		<ul style="list-style-type: none"> Mechanical design and stress analysis of weapons handling systems. Design/ certification of man-handling safety equipment. 	02/15 - 12/15 Cheshire
SolidWorks	● ● ● ● ● ●	Systems Manager (contract) KDA	Space
SolidWorks Simulation	● ● ● ● ● ●	<ul style="list-style-type: none"> Technical Authority & Systems Manager for SADM's used on Copernicus, Solar Orbiter and Exo-Mars spacecraft. Test support/ manager (vibration, shock, friction, TV, Elec) Technical representative in PDR, CDR, TRR, PTR & FRR Generation of DDF, DJF, TRS, VCD, ICD, TP, TR, ARPT to 	01/11 – 01/15 Kongsberg Norway
Pro/Engineer Wildfire	● ● ● ● ● ●		
Siemens NX	● ● ● ● ● ●		
FEMAP/ NASTRAN	● ● ● ● ● ●		
PDM	● ● ● ● ● ●		
Microsoft Office	● ● ● ● ● ●		
Visual Studio	● ● ● ● ● ●		
Analysis			
Modal	● ● ● ● ● ●		
Stress	● ● ● ● ● ●		
Static Thermal	● ● ● ● ● ●		
Dynamic thermal	● ● ● ● ● ●		
Vibration	● ● ● ● ● ●		
Education			
Mech & Prod'n Engineering	HNC		
Computer Assisted Eng.	HNC		
Accounting	RSA		
Mechatronics	Diploma		
Cognitive Robotics	Diploma		

Courses		ECSS requirements. <ul style="list-style-type: none"> Shock & Vibration specialist. 	
Modern Project Management		Mechanical Design Engineer (contract) General Vacuum	Vacuum Chambers 04/10 – 12/10 Manchester
Business Law (AAT)		<ul style="list-style-type: none"> Design of large vacuum chambers used in the application of Aluminium or Aluminium Oxide to plastic film for use in Packaging, or fire-retardant clothing. 	
International Trade and Payments (IoE)		Mechanical Design Engineer (contract) 360 Vision	CCTV 01/10 – 03/12 Runcorn/ home
International Physical Distribution (IoE)		<ul style="list-style-type: none"> Design of complex CCTV camera housings including for use in hazardous and explosive environments. 	
Ferranti Technician Apprenticeship		Mechanical Design Engineer (contract) RTS	Robotics 05/09 – 12/09 Manchester
Tang Soo Do 2 nd Dan		<ul style="list-style-type: none"> Design of laboratory robots used in the handling and storage of blood, saliva and DNA. Design of -20°C and -80°C DNA storage solutions 	
Languages		Mechanical Design Engineer (contract) Magna Powertrain	Engines 02/08 – 05/09 St Valentin Austria
English	Native	<ul style="list-style-type: none"> Conceptual design of a unique 2-stroke diesel aircraft Engine with horizontally opposed pistons. Analysis of highly stressed engine component parts. Conceptual design of a compact 12-cylinder airship 	
French	Intermediate	Managing Director Valencia Bathrooms	Retail 05/07 - 2010 Manchester
Spanish	Basic	<ul style="list-style-type: none"> Management of a busy bathroom showroom, including sales, design, accounts, purchasing, staff management, site installation management and project management. 	
Mandarin Chinese	Spoken	Mechanical Design Engineer (contract) McCormick	Tractors 12/06 – 05/07 Doncaster
		<ul style="list-style-type: none"> Integration of new diesel engines into a range of agricultural tractors to meet updated emission requirements. 	
		Mechanical Design Engineer (contract) General Vacuum	Vacuum Chambers 10/06 – 12/06 Manchester
		<ul style="list-style-type: none"> Design of large vacuum chambers used in the packaging Industry. 	
		Mechanical Design Engineer (contract) MAN	Engines 01/06 – 10/06 Manchester
		<ul style="list-style-type: none"> Adaptation of Marine Diesel Engines for the Chinese Coastguard, working alongside a team of Chinese engineers. 	
		Mechanical Design Engineer (contract) RTS	Robotics 10/05 – 01/06 Manchester
		<ul style="list-style-type: none"> Design of bespoke laboratory robots used to separate and store DNA from blood samples. 	
Achievements		<ul style="list-style-type: none"> Achieved the first Space-Flight Qualification for KDA (Norway) in 10-years. Helped win an innovation award for a 5-axis flight simulator for the RAF. Reduced design to finished machining times by over 200% at Philips through the introduction of Pro/Engineer and Pro/NC. Wrote a program in Pro/Program to automate the design of waveguide components, and automatically generate 2D drawings in Pro/Engineer. Modularised the HPA assemblies at Siemens SatCom, reducing design time by over 100%. 	