

3rd International Conference and Exhibition on Mechanical & Aerospace Engineering

October 05-07, 2015 San Francisco, USA

Design and development of an experimental aircraft

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A flying aircraft can be dangerous to operate. Air-worthiness and safety issues must be fully addressed. A variety of designers and producers have taken the easy route by procuring and assembling suitable knock-down kits from which good 'home-made' aircrafts have been produced. Many of such aircraft are being deployed in private leisure, sport and other categories. Production of experimental aircraft poses special challenges, because the resulting air vehicle must not only fly safely but be capable of supporting aerial experimental activities. In the present work, the university team's focal point is on the optimum balance of flight safety and effective achievement of the experimental missions. Hence, we address such functions and capabilities as handling qualities, aerial photography and the multi-faceted system of aerodynamic data acquisition, on-board storage and retrieval. Further, all design calculations must mainly be produced from the designer's original concept and not imported from other sources. The team is unaware if a similar aerial vehicle has been produced, tested and used in such a stringent frame, in a university environment.

Biography

Faustin Ondore is an accomplished Professional Aerospace Engineer. He earned his PhD from Brunel University, London in aerodynamics research topic that entailed the use of a combination of experimental and numerical methods (Computational Fluid Dynamics) and successfully predicted separation in highly turbulent flows in a complex geometry. His is currently focused on the identification and development of a CFD model for a priori prediction of detachment (and reattachment) in flow domains of engineering and other interest. Also, since his appointment as the Chairman of the Department of Aerospace and Aviation Engineering at the Technical University of Kenya, he is leading his department's efforts towards production and operation of the first Kenyan designed aircraft. Prior to that, he worked in senior roles in the aerospace and defense sectors in the United Kingdom and other countries, where he has lectured on aerospace engineering in a number of universities and colleges.

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