Dr Pascual Marqués Ph.D.

Founder & President
Marques Aviation Ltd

MARQUES™
AVIATION

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Professional Summary

My professional activities encompass business, academic, and research sectors. At Marques Aviation Ltd – UK, I oversee the design, research and innovation, commercialisation, marketing, and sales of the MA unmanned aircraft series. My role as International Director for the United Kingdom of Unmanned Vehicle University involves business development and allows me to provide education in the exciting field of Unmanned Systems Engineering.

Highlights

Founder & President – Marques Aviation Ltd, UK.

International Director (UK) – Unmanned Vehicle University

Editor-in-Chief – International Journal of Unmanned Systems Engineering

Congress Chair – World Congress on Unmanned Systems Engineering

Conference Chair – International Aerospace Engineering Conference

Experience

Business
My roles at Marques Aviation are diverse and include the executive management of the company, preparation of yearly company accounts and legal documentation, international business development, establishment of a technical and sales presence World-wide, setting up international partnership with research institutions and

industry partners, participation in aircraft R&I, co-ordination of research funding consortia (EU, H2020, DARPA, NSF and SBIR), preparation of aircraft acquisition technical and financial proposals and tender bids, initiating marketing activities, and delivering keynote talks at international conferences and exhibitions to promote the company and acquire clients.

Academic
My work at Unmanned Vehicle University encompasses international business development, instruction in numerical analysis and aerodynamics, and chairing of the Doctoral Dissertations Committee and Ethics Committee. I am also the Editor-in-Chief of the International Journal of Unmanned Systems Engineering, Chair of the World Congress on Unmanned Systems Engineering, and Chair of the International Aerospace Engineering Conference.

Research
My primary areas of research interest are in the fields of Aerodynamics, Flight Dynamics, and Aircraft Design. Research projects involve the implementation of theoretical aerodynamics for applications in UAV engineering using numerical analysis (MATLAB), computer aided engineering (CAE), and computational fluid dynamics (CFD). Wing aerodynamic efficiency is optimized by adjustment of Oswald efficiency, incorporation of flow control devices, modification of tip vortex and wake configuration, and application of optimized geometric and/or aerodynamic twist. Flight dynamics of air vehicle are enhanced using principles of automated flight control, aeroelasticity, and adaptive wing technology. My research publications include over 80 peer- and non-peer reviewed journal research papers, conference abstracts, and books.

Education

2005 - PhD in Engineering Mechanics. Liverpool John Moores University, UK.

2000 – MPhil in Engineering Mechanics. Brunel University, UK.

Engineering Courses Taught

MAT 701 – Numerical Analysis

MAT 703 – Linear Algebra

UAV 801 - UAV Aerodynamics and Flight Stability

RES 901, 902, 903 - Doctor of Science Dissertation Research

References

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Selected Publications

1. Marqués, P. (2010). (Ed.). *Radio nav: NDB navaid and ADF avionics*. Marques Aviation Ltd. Southport, United Kingdom. (Paperback ISBN: 9781907980008).

2. Marqués, P. (2010). (Ed.). *Radio nav: NDB navaid and ADF avionics*. Marques Aviation Ltd. Southport, United Kingdom. (eBook ISBN: 9781907980015).

3. Marqués-Bruna, P. and Grimshaw, P.N. (2011). Formula 1 aerodynamics: Versatility of the NLF(1)-0414F airfoil at low Reynolds numbers. *14th Australian International Aerospace Congress.* 28 February - 3 March 2011, Melbourne, Australia. Concurrent Session 2I. Pp. 1-10.

4. Marqués-Bruna, P. and Grimshaw, P.N. (2011). Design of the Grand Touring sports car wing. *Proceedings of the Institution of Mechanical Engineers, Part P, Journal of Sports Engineering and Technology.* ***225***(1): 22-31.

5. Marqués-Bruna, P. (2011). Engineering the race car wing: Application of the vortex panel numerical method. *Journal of Sports Engineering.* ***13***(4): 195-204.

6. Marqués-Bruna, P. (2012). Wing design with a twist: Optimised geometric twist of the Grand Touring sports car wing. *Proceedings of the 12th Pan American Congress of Applied Mechanics (PACAM XII)*. *Fluid Mechanics Symposium*. 2nd – 6th January, Port of Spain, Trinidad & Tobago. Pp. 1-6.

7. Marqués-Bruna, P. and Spiridon, E. (2013). Adaptive wing technology, aeroelasticity and flight stability: The lessons from natural flight. *2013 Maui International Engineering Education Conference.* 3rd – 5th January, Maui, Hawaii. Pp. 25-34.

8. Marqués P. (2013). Emerging technologies in UAV aerodynamics. *International Journal of Unmanned Systems Engineering*. ***1***(S1): 3-4.

9. Marqués P, Bachouche A and Maligno A. (2013). Aerodynamic evaluation of the Djebel Laassa UAV. *International Journal of Unmanned Systems Engineering*. ***1***(1): 9-15.

10. Marqués P. (2013). Flight stability and control of tailless lambda unmanned aircraft. *International Journal of Unmanned Systems Engineering*. ***1***(S2): 1-4.

11. Marqués P. (2013). *UAV aerodynamics and flight stability – Lecture series on DVD.* Unmanned Vehicle University Press. Lake Havasu City. Arizona.

12. Marqués P, Maligno A, Dierks S and Bachouche A. (2013). Flight dynamics principles of canard aircraft: Implications for UAV configuration decision. *International Journal of Unmanned Systems Engineering*. ***1***(2): 12-30.

13. Marqués P. (2013). Aerodynamics and stealth of the low-observability RQ-3 DarkStar. *International Journal of Unmanned Systems Engineering*. ***1***(S3): 1-5.

14. Marqués P, Maligno A, Dierks S, Penev V and Bachouche A. (2013). The Jinn military unmanned helicopter program: Rotor blade tip aerodynamics of the advanced technology demonstrator. *International Journal of Unmanned Systems Engineering*. ***1***(3): 6-15.

15. Cunningham J and Marqués P. (2014). Unmanned vehicles: Enhancing security, rescue and natural disaster management capability – Part I. Australian Security Magazine. February. Pp. 38-41.

16. Cunningham J and Marqués P. (2014). Unmanned vehicles: Enhancing security, rescue and natural disaster management capability – Part II. Australian Security Magazine. April/May. Pp. 30-32.

17. Marqués P. (2014). Aerodynamics of the UCAV 1303 delta-wing configuration and flow structure modification using plasma actuators. *International Journal of Unmanned Systems Engineering*. ***2***(1): 15-28.

18. Sokolov YN, Iliushko VM, Abdul-Retha EA, Osemwengie O, Marques P and Dierks S. (2016). *Automatic control systems*. Marques Aviation Ltd. Southport, United Kingdom. In press.

19. Ilushko VM, Abdul-Retha EA, Alexander S, Zaretskaya I, Osemwengie O, Dierks S and Marques P. (2016). *Integrated technology of information systems design and development.* Marques Aviation Ltd. Southport, United Kingdom. In press.

20. Marqués P and Da Ronch A. (2016). (Ed.). *Novel concepts in unmanned aircraft aerodynamics, flight stability, and control.* Wiley Publishers. Chichester, West Sussex. In press.