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Foreword
The 18th Australian International Aerospace Congress

This special edition of *The Aeronautical Journal* contains selected papers presented at the 18th Australian International Aerospace Congress held on 24-28 February 2019 in Melbourne. The Australian International Aerospace Congress is a fixture in the Australian aerospace calendar as the premier event for presenting the latest achievements in aerospace research and development. It is held biennially in association with the Australian International Airshow at Avalon Airport. The event is jointly organised by the Royal Aeronautical Society Australian Division and Engineers Australia under an agreement of collaboration.

For the first time, the International Symposium on Space Flight Dynamics (ISSFD) was incorporated in the congress, which facilitated a great contribution to the space technology content with 30% of the presented papers related to spacecraft design, space flight dynamics and space mission operations. Only a year earlier, the Australian Government established the Australian Space Agency as Australia's national agency responsible for the development of Australia's commercial space industry.

These are indeed exciting times for the Australian aerospace and aviation industry.

At the 2019 Australian International Airshow, Boeing Australia unveiled a mock-up of a new unmanned air vehicle called the Airpower Teaming System, designed to fly as a loyal wingman alongside fourth- and fifth-generation fighter aircraft. Boeing and Australia will produce a concept demonstrator called the Loyal Wingman – Advanced Development Program that is intended to provide key learnings toward production of the Boeing Airpower Teaming System.

Qantas, the Australian national carrier, opened its non-stop service between Perth and London in March 2018, with a range of 15,000km, eliminating a stop in Asia or the Middle East. This *Kangaroo Route* ended the era of the continents of Europe and Oceania not being connected by non-stop flights. In October 2019, Qantas successfully completed a trial flight non-stop New York to Sydney with a range of 16,000km named *Project Sunrise* after the airline's historic *Double Sunrise* endurance flights during the Second World War, which remained airborne long enough to see two sunrises.

The aircraft manufacturing, repair services and air transportation industry annual direct and indirect contribution to GDP is about 3.2% with 400,000 jobs across Australian industries. The industry is driven by its business capabilities and technical expertise, rather than high volumes in the global aerospace market. Further opportunities are evolving in newer sectors such as UAVs, urban air transportation and the space sector. Leveraging Australia's research excellence and transforming it for industry use stimulate new sectors and help Australia tap niche markets.

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