

Shaft of the Spear: Evolution of the RAAF Technical Services to the End of the Second World War.

Gregory Grantham and Edward Bushell

**Reviewed by Group Captain
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Published in 2004, *Shaft of the Spear* provides a detailed historical backdrop to renewed current debate whether Air Force capability development and technical evaluation processes have suffered from serious de-skilling over recent years. The title of this work emphasises the critical issue involved, for while the point of the spear is the 'sharp end', the shaft is critical for its flight.

Greg Grantham and Ted Bushell joined the Royal Australian Air Force as engineering apprentices in 1948 and rose through the ranks to become senior engineers. This A4-size book of 20 chapters and over 60 photographs is an excellent historical reference covering the evolution of the RAAF's Technical Services – generally to the late 1940s. The research has been detailed and extensive, with the forward by the then Chief of Air Force, Air Marshal Angus Houston, highlighting the importance of in-service technical support to successful air operations.

The introduction provides an excellent overview of aircraft and technical development from 1912 to the end of World War II. The remainder of the book traces the development of the organisation and skills needed to train some 70,000 technicians to service the 5800 aircraft that formed the RAAF by 1944. Unfortunately, policies enforced at the end of the war meant that the RAAF had to go into the Korean conflict, only five years later, with a run-down maintenance structure.

The details of the Government's Policy Review in 1922, the lack of support for civil aircraft production, and the demise of technical training echoes much of today's situation. The fight for survival of the force and the impact of British thinking reflected in the comments made by an ex-RAF Chief of Air Staff in 1938, while complimentary of the technical services, were unhelpful to the new Service in its fight for proper recognition and resourcing. The eventual re-equipment of the RAAF with 'modern' aircraft during World War II, the establishment of local production and maintenance capabilities, and the various expansion plans to achieve this are well presented. The impact of the Wackett brothers on Australian aviation, L.J. who became head of Commonwealth Aircraft Corporation and E.C. who became the RAAF's Air Member for Technical Services, is covered in some detail.

The book traces the rapid advancements in technology that flowed throughout World War II and the new challenges that these presented to the Technical Services. The frustrating interfaces with Australia's evolving aircraft industry, and the Aircraft Production Commission that had been formed to manage it, are well explained.

The debate during the 1940s regarding the need for a dedicated and specialist engineering branch within the

RAAF is full of power plays, making one smile at how the essential aim can be so forgotten – even today. Details of the establishment of the position of Air Member for Technical Services, with career opportunities supposedly equal to those of the General Duties Branch, is great reading. However, the Air Board Agendum specifying the balance of technical staff to be aimed for, between commissioning from the ranks, direct entrants, and university graduates, proved to be most effective over the long term.

Some World War II operational experiences are covered in some detail to demonstrate the difficulty faced by RAAF ground staff in supporting aircraft in the demanding conditions of the European winter, the deserts of North Africa, and the almost impossible conditions of the tropics. A well-drawn comparison is given between the maintenance policies and trade skills of the RAAF, RAF and USAAF during the war, together with an outline of their respective (and different) supply support systems. The RAAF's heavy reliance on the in-theatre salvage and repair of damaged aircraft by its Repair and Salvage Units is traced in detail.

The concluding observations of *Shaft of the Spear* provide a succinct summary by the authors of the development of those technical functions needed within the Air Force to keep pace with technology and to support the RAAF's rapidly expanding operations around the world. Over 30 appendices cover a wide range of events, such as the test pilot who escaped from an exploding Wackett bomber, the success of the photo reconnaissance Mosquito at the Leyte landings, and a whole range of meetings, statistics, memoirs, and other documents of the period. These are often not readily available sources to the general reader and their inclusion provides invaluable insights into the broader subject covered.

Shaft of the Spear is a detailed account of causes and events, refined and rewritten to compile an extremely well researched and detailed story. Each of the 20 chapters covers a specific aspect of the subject; collectively making up an excellent history of the early days and foundations of the RAAF's Technical Services.

As the title notes, despite the profile and even glamour of the point of the spear, the shaft is critical for its flight. Sadly, with the demise of the RAAF's engineering branch and the widespread de-skilling of the Air Force, much of the experience and knowledge comprehensively built up over decades has been discarded – a disturbing thought to many! ♦

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