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Challenges for the Tier 1 major integration supplier

Vought Aircraft Industries is on a path of growth from the foundation of a large and globally diverse customer base. Today, our customer satisfaction expectations extend across commercial, military, and business aircraft contracts, all of which are currently being executed at seven separate U.S. facilities. The foundation that drives our performance levels across this spectrum is provided by an integrated Quality Management System (QMS) that satisfies all customers, as well as ourselves.

In an environment of constant industry change, involving acquisitions, mergers, tailored flow-down requirements, and other challenges, how does Vought ensure it stays on the quality continuum?

We begin with a strategic emphasis on active involvement within industry quality organizations, committees, and trade associations. This strategy has two goals:

- To acquire an understanding of quality best practices across the evolving industry initiatives as we develop and improve our QMS, and
- To influence the outcome of these initiatives based on our own experience and perspective.

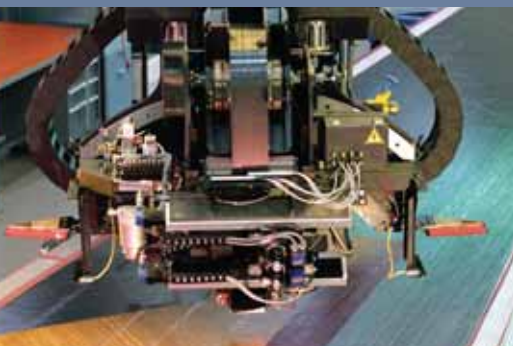
A significant part of this effort involved placing a strong priority on the evolution of the Quality Engineering (QE) discipline. We eventually came to grips with the fact that the majority of our QE employees had legacy inspection backgrounds, which was limiting their contribution to both the non-recurring development phase of our programs and to root cause corrective action in production. We carefully examined our strengths and weaknesses in this area, and made a concerted effort to redefine Vought's expectation of the QE function.

Today, we have a strong and highly technical staff of QEs who perform key tasks throughout the product life cycle, especially during development. They have embraced and implemented an Integrated Build Package development philosophy. This approach subsequently led us into the Design for Manufacturing methodology, a process that has significantly changed how Vought identifies and mitigates all possible sources of variation in the product before it is ever produced as a First Article. The benefits of this approach have been overwhelming.

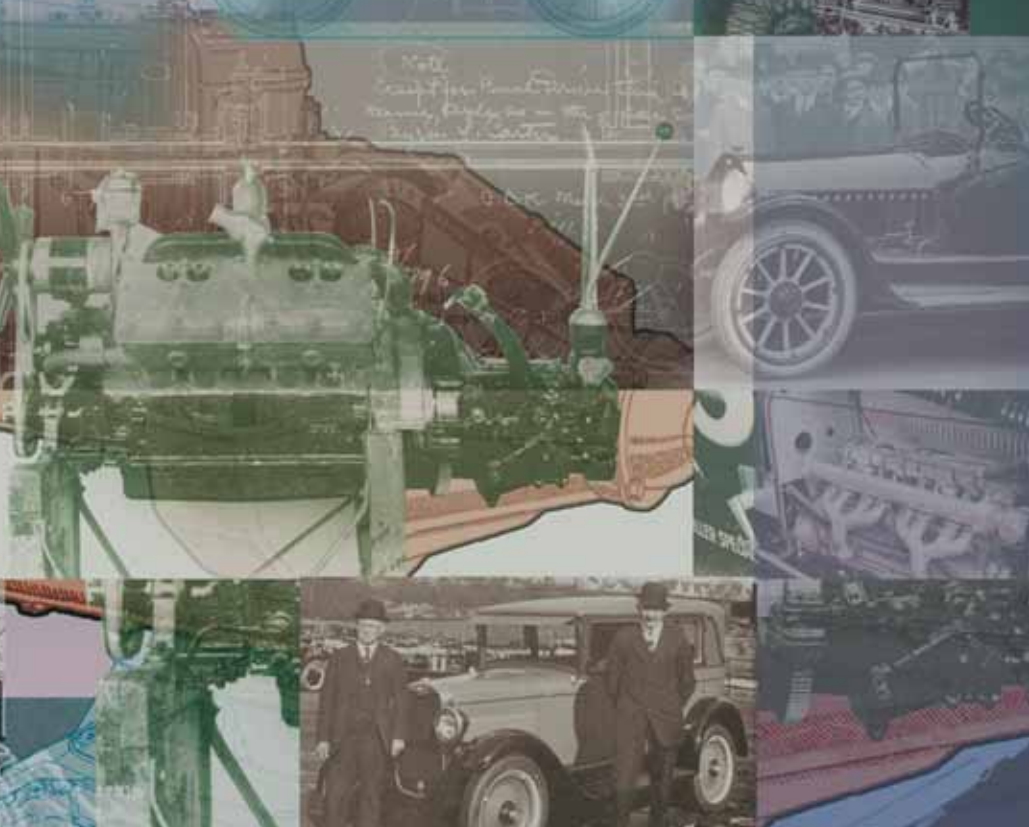
QE's primary role is to influence the development process by producing a



Gantry trim and drill machine for precision high-speed drilling and trimming.



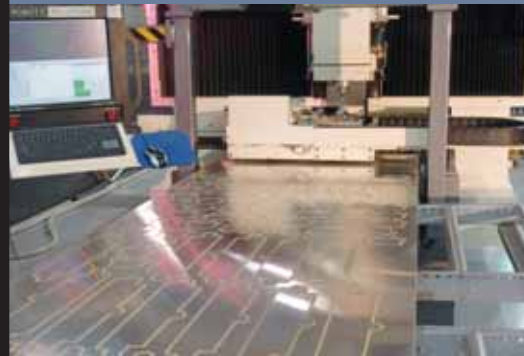
Automated multi-axis composite tape laying machine for layup of large, complex panels.



Broetje auto riveter drills and installs fasteners common to skins and substructure.



Reconfigurable multi-axis robotic drilling/tacking cell for determinate assembly.



Precision high-speed flat stock router for sheet metal details meeting determinate assembly tolerance.

robust design and manufacturing plan that removes the potential for defects or mistakes. Deliverables include clear, understandable work instructions, along with a combination of equipment and processes that result in a product well within required tolerances. These critical components lead to the ultimate goal of eliminating the need for traditional inspection. They are also chartered to define innovative methodologies that ensure and validate conformity of the product, by using an error-free build package, starting at Part Number One. This method enables our QMS to be executed in a way that prevents system disruption but effectively addresses and complies with all contractual flow-down requirements.

Complementary to this effort, Vought began aggressively pursuing industry registration to AS9100 in early 2002. A year later, we started the process of obtaining industry accreditation to **PRI**/Nadcap for all of our special fabrication processes. In the 60-day period between November 2004 and January 2005, Vought Aircraft Industries was rewarded with the fruits of these labors, becoming registered by an approved other party to the AS standard, followed by the industry

Nadcap accreditation. Each of these initiatives supports the other. Both heavily emphasize the importance of preventive actions and effective management oversight. Both deploy process ownership and robust internal audit systems, and both place a strong priority on contract review and risk management.

The QE function at Vought has matured along a path that coincides with all of these strategies. We have strengthened the company's career path in this area, while increasing the awareness that quality extends to all departments. This approach has also enabled our homerooms to effectively recruit young talent. Candidates with technical degrees are seeing firsthand how they can make appreciable contributions to the overall integrity of our products even as the initial designs of those products are taking shape. **AE**