THE RAAF AND FUEL SECURITY IN WORLD WAR II

As a result of renewed interference with production of aircraft fuel by Allied actions, most essential requirements for training and carrying out production plans can scarcely be covered by the quantities of aircraft fuel available.

Allied ‘Ultra’ intercept, German OKW message, 5 June 1944.

It was highlighted in Pathfinder # 270, Air Power and Energy Security, that in the future the air force’s ability to deliver air power may be adversely affected by the impact of declining energy security on the availability, affordability and reliability of liquid fuels. When World War II broke out the Air Force had similar concerns. The large scope of the construction and capability development programs undertaken to establish adequate aviation fuel security in Australia during World War II illustrates the magnitude of effort required to ensure energy reserves for Australia’s armed forces.

When World War II started in 1939 the Air Force faced a two-fold challenge in guaranteeing access to aviation fuel. The first element of the challenge was that there was insufficient refining capability in Australia to fully meet the Air Force’s fuel needs. The development plans for the Air Force at that point was to increase the strength from 12 to 19 flying squadrons by June 1941 (later increased to 32 squadrons) and a commitment to train up to 14 000 aircrew per year for service with the RAF in Europe. All the aviation fuel required to sustain the increased flying rate to achieve these targets would have to be imported and stored for exclusive use by the Air Force.

The need to import its entire fuel needs gave rise to the second element of the Air Force’s challenge. The increase in aviation fuel consumption in Europe, and war related threats to both refining capability and maritime routes indicated that a large fuel reserve was required in Australia to mitigate a possible interruption to supply. The solution was to establish three fuel depots with a combined capacity of 1.8 million gallons (8.2 million litres) in south east QLD, north east NSW and central VIC respectively. The total storage capacity of the depots represented six months of projected consumption. The locations were determined by the proximity to rail heads and distribution corridors to the main end user airfields. The threat to the depots from enemy attack, while also taken into consideration was not in the first instance thought of as a major issue. For Air Force, the depots represented a strategic reserve and distribution centre. They were not intended to be operated in the same manner as a base level fuel farm.

As planning and construction of the fuel depots got under way there arose inevitable difficulties and changes to requirements which had to be resolved. The first problem was one of imminent oversupply. Delivery of the first 1.8 million gallons of fuel was far more prompt than expected and temporary storage at commercial facilities had to be arranged. It was however the constant increases to the projected size of the Air Force in terms of flying units and training requirements which caused the biggest issues. Between January and November 1940 the estimated six month usage of fuel went from 1.8 million to 3.2 million gallons and consequently the number of depots required increased from three to eleven.

The effects on the cost, manpower and transportation requirements of every additional depot were significant. A 200 000 gallon fuel tank cost £3 300 and required 54 tons of steel. The additional real estate, railway branch lines and associated infrastructure all added to the cost and complexity of the project. The single biggest challenge to
the project came when the imperative for a strategic fuel reserve went from ‘essential’ to one of national security imperative in December 1941 when Japan entered the war.

Until Japan’s entry into the war the sense of urgency in establishing the inland fuel depots could be described as ‘determined’, but by January 1942, the mood of the works committee became noticeably more focused and hurried. With the invasion of Australia possible, the Air Force expansion plans grew even more. The six month usage estimates went from 3.2 to 15 million gallons during December 1941 and by the end of January it had climbed to 40 million gallons for the Air Force and an addition 10 million gallons for the US Army Air Corps units being dispatched to Australia. The number of depots required went from 18 to 31 with additional and larger tanks being planned within each depot. By 1945 the Air Force had fuel depots in every mainland state in Australia as well as in the Northern Territory.

As the expanded program took shape the nature of the construction plans changed considerably. Precautions around security went from preventing local pilfering and reducing the fire risk to consideration of potential for air and ground attack. Accommodation for armed guards was included in all depots and anti-aircraft gun emplacements were considered. Similarly, the threat of sabotage prompted suggestions for the Air Force to develop units similar to the RAF Regiments—what the Air Force came to call Airfield Defence Guards. As the bombing of Darwin had shown that the threat of air attack was a serious possibility, the new depots had to be sited further inland, while additional protective walls and camouflage netting was constructed around tanks in the more vulnerable locations. The Inland Fuel Depots, as they were called, were not all completed until late 1943.

In order to sustain Air Force aviation fuel needs, not only were the fuels depots required, but wider infrastructure also had to be developed. By February 1942, an additional 208 fuel tankers were required in order to support air operations at the growing number of Air Force stations across Australia. In Queensland, the 1.6 million gallons of aviation fuel that needed to be transported each month from seaport to depots and then on to the airbases required an additional 80 fuel specific railway cars and an additional 10 locomotives to be constructed in the state’s rail yards. The difficulties in delivering this capability was magnified by the increasing demand for steel from other Defence related industries such as ship building and a decreasing supply of skilled workers.

Australia was only able to develop a strategic fuel reserve capable of meeting its own and its coalition partner’s needs due to there being a sufficiently developed steel and manufacturing capacity in Australia at the time. Without this capacity, construction of the fuel depots could not have been achieved. Similarly, had there not been a commitment to establishing a strategic reserve in 1939, the consequences of not being able to support an operational surge in 1942 may have been even greater than was actually experienced.

When the war ended, the downsizing of the Air Force and reduced flying rates resulted in the Government directing that all the fuel depots be sold off by the Department of Supply. Should Australia need to re-establish a strategic reserve of aviation fuel, a similar construction and development program will be required. As the World War II experience demonstrated, a strategic fuel reserve that is adequate to meet demand, secure and accessible requires significant lead time to develop and a commitment of adequate resources.

Key Points

- Without strategic energy reserves the ability of fuel dependent forces to meet national security requirements can be readily compromised.
- Energy security is a whole-of-nation imperative, requiring a whole-of-nation response.
- Threats to the means of sustainment must be factored into the planning for war reserve holdings.