## Where have all the Manufacturers gone? By Roger Gibbs

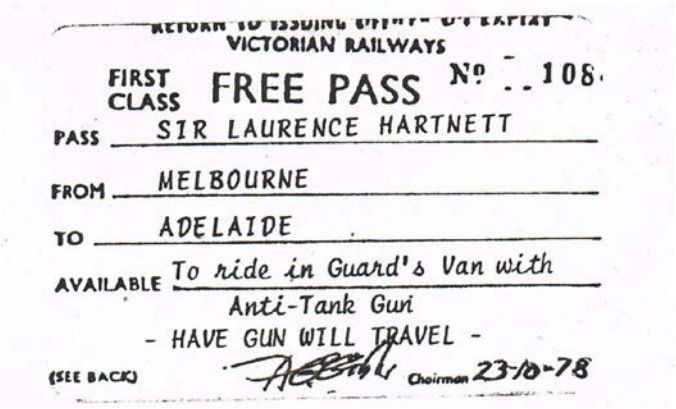
In 1955, for those of you who remember, Pete Seeger posed the question:
*Where have all the flowers gone, long time passing*
*Young girls picked them, everyone"*
If we transcend that to today, we may well ask:
*Where have all the manufacturers gone?*

My father, A. G. (Bill) Gibbs, spent the greater part of his career with GM-Holdens and whilst he died some time ago I have only recently been sorting through the vast collection of papers he left from his time in industry. I was struck by two things: firstly the enormous skills Australians had in manufacturing which we now seem to be rapidly losing, and secondly that manufacturers have forever been bedevilled by bureaucrats, although it seems that in times past it was easier to manoeuvre around them.

These skills are well illustrated by Holdens' activity during WW2 and the following are extracts from my father's notes. The first substantial wartime project was to produce the 2-pounder anti-tank gun, for there was no capacity at the government Maribyrnong Ordnance Factory. It was a tough initiation. The gun had been produced in the U.K. just before Dunkirk and in relatively small numbers. It was inadequately tried and proven and information concerning it was meagre.

There were only two sample 2-pounder guns in Australia and the British Army had lost most of theirs when they left them behind at Dunkirk. Laurence Hartnett, who was the Director General of Ordnance Production during the war and was based in Melbourne, wanted one rushed by express train to Holdens' Woodville plant in Adelaide to get work started. However he hadn't reckoned with the bureaucracy of the guard at Victorian Railways who seemed blithely unaware that a war was on and refused to accept a weapon in his guard's van. Hartnett personally had to go to Spencer Street station where the guard re-iterated "you can't put arms on a train without a permit, it's against regulation". 10 minutes of argument and threats finally overcame the recalcitrant guard and it caught the Overland that night. In a nice little sequel to this, 38 years later in 1978 when my father was Chairman of VicRail, he invited Hartnett to Spencer Street for lunch and presented him with a VicRail

Pass that authorised him to take anti-tank guns in the guard's van at any time, which rather delighted him.



VICTORIAN RAILWAYS

FIRST CLASS FREE PASS No. 108

PASS SIR LAURENCE HARTNETT

FROM MELBOURNE

TO ADELAIDE

AVAILABLE To ride in Guard's Van with Anti-Tank Gun

- HAVE GUN WILL TRAVEL -

(SEE BACK) Chairman 23-10-78

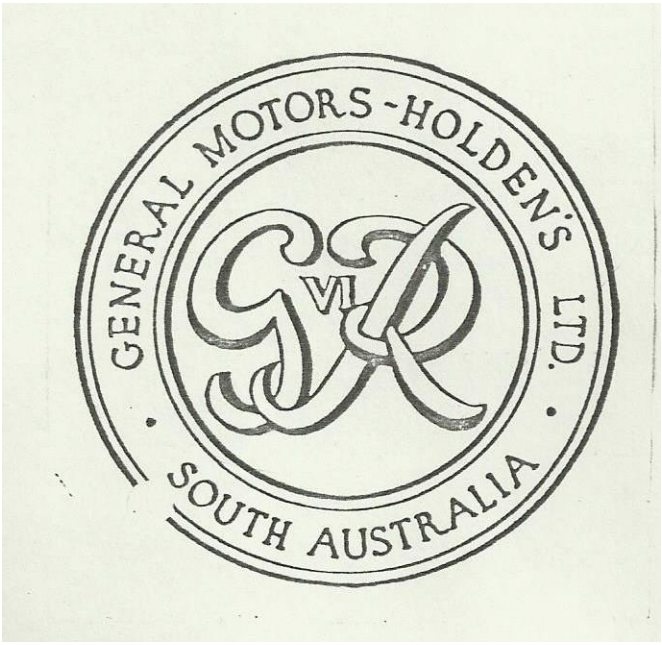
There were very few drawings accompanying the sample gun, and they only covered part of its design. Further, the design was complicated and not done with mass production in mind, having a high number of elaborate features which required expensive tooling and a large number of machine hours; new practices in machining had to be understood and special high tensile steel had to be developed in Australia. The opinion of the high military officials was that this gun could not be made locally in Australia by private enterprise, though they considered the Government Ordnance Factory could make it in low volume. The requirement was for a total of 1,000 guns at a rate of 100 per month, complete with spare parts and ancillary equipment.

The sample gun arrived at Woodville in June of 1940, it was stripped down and local sub-contractors called in to sign up for what they could make - all told 50 were involved. The rest Holdens would make as well as the total co-ordination and assembly. By December the first barrel forgings were received and by February 1941 the production problems had been overcome with sample parts flowing in from the sub-contractors. The first complete gun was assembled in


*My father explains the rifling operations on the gun barrel to the Governor-General, Lord Gowrie*

March and successfully fired and approved in April. As the program developed it attracted a lot of attention by Military and Government personnel with many visiting the Woodville plant

As Holdens approached the final assembly and checking of the first gun the Army Inspectorate advised that before any weapon could be received by the military it had to have an official monogram on it. This was the first time in Australia that a gun had been made outside the Government Ordnance Factory, which had been granted permission to follow the U.K. Royal Ordnance Factory practice and use the Royal Monogram with the initial "R.O.F." followed by the production location, e.g. Woolwich. It was beyond the authority of the local military personnel to allow a private industry to use the Royal Monogram and they could offer no solution to the dilemma.

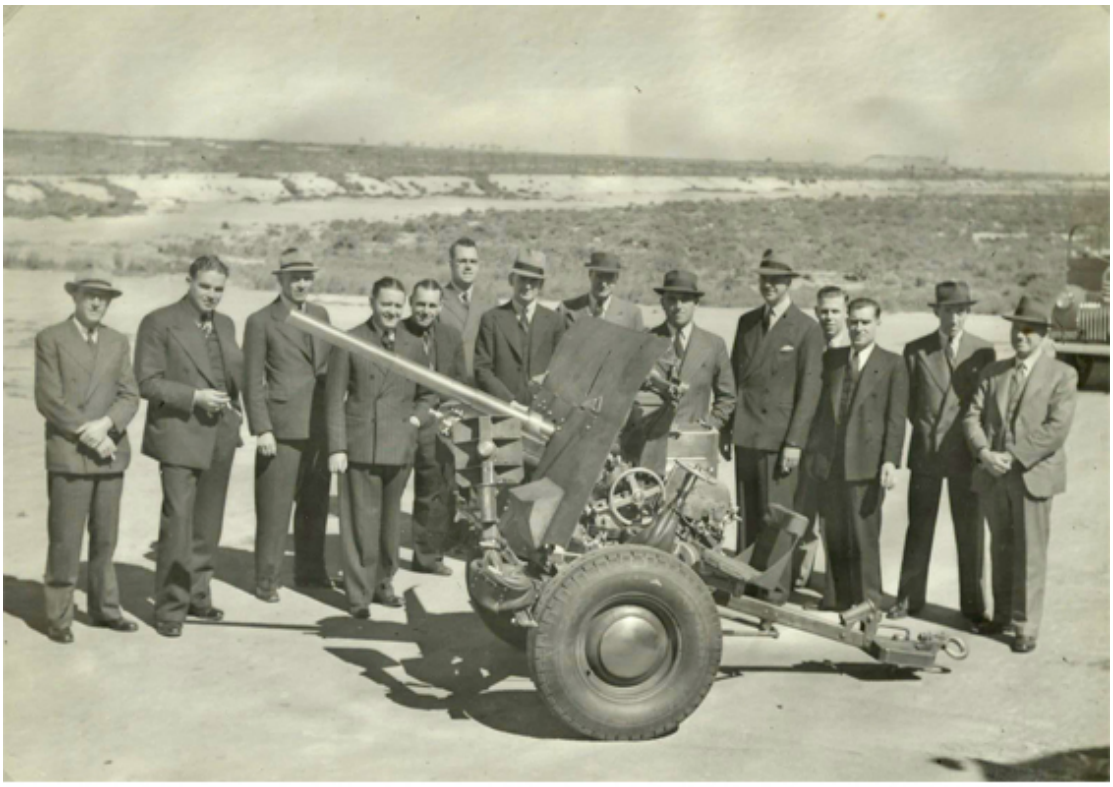



Undaunted the folk at Holdens came up with their own idea for a monogram and the issue eventually reached a sufficiently high level for it to be approved and all Holdens weaponry was identified with it. Guns were required to have "GR VI" on them, which the factory people referred to as "the licence to kill".

The next problem was how to produce the monogram. The Ordnance Factory used special transfers which etched the monogram on the barrel using cupric ammonium chloride – the surface of the barrel around the monogram was painted with bitumen black, and the acid enclosed in a greased leather washer, using plasticine to effect a seal.

This wasn't an approach that Holdens wanted to take. Fortunately they had people with a wide diversity of skills undertaking the war work, including, but so far not used, an elephant trainer and a white ant expert. There was, however, an engraver, and so he was given the task of hand engraving the monogram on every barrel before the army would accept them. Holdens were now moving to a production rate of 120 two-pounders

a month, plus spares, and the engraver became the bottleneck in getting a much needed weapon to the troops. The problem was solved by the tool room making a die and the monogram was applied by mounting the gun barrel in a special fixture, which enabled the barrel to be rotated, whilst hydraulic pressure was applied to the monogram die as it moved over the rotating barrel.



*Successful test firing of the 2-pounder at Port Wakefield, SA April 1941. My father is 6th from the left.*

There was a lot of scepticism on the part of the Army Staff at the Port Wakefield Proof Range as to the ability of a firm of Motor Body Builders to make guns. When the day came for the firing of the first gun in April 1941, the Holden personnel were allowed to go to the Proof Range but told to take shelter in a concrete bunker. The firing was done remotely using a long cord. The gun was loaded, the cord pulled, and there was a loud blast accompanied by an unusual metallic noise, which elicited a cry of "The barrel has cracked" from the Army man in the bunker. All that had happened was that some empty gun cases left near the gun had been thrown to the ground by the blast. So everything was O.K., appropriate photos were taken and confidence gained in the Motor Body Builders.

Another fight with bureaucracy was with the bureaucrats in the Army Inspection and the Aircraft Inspection Directorate (AID), over the

inspection of components, as many civilians had been recruited with little product knowledge or understanding of the importance of mating parts at assembly and lacked the process to get decisions at a higher level. Many of the aircraft parts were non structural and non critical, frequently made from masonite dies, but all such items had a standard tolerance of +/- .010 inches.

The classic case that caused a lot of fuss through top levels at Holdens and at AID and was ultimately used as test case to get some sanity in the process, was a chemical toilet supplied for the Beaufort bomber. The die for producing the toilet seat also blanked out the hole and formed the shape. Holdens had produced many seats but there was a variation in the blank die that made the hole diameter slightly outside the +/- .010 inch tolerance. The AID factory inspectors refused to look at this from a practical standpoint and rejected them all. So the toilet seat was used as an example of the poor standard of personnel recruited to accept and reject parts when the country was crying out for aircraft. Holdens argued that they could not believe the designer had made a study and arrived at a hole opening which matched all the bottoms of RAAF personnel within such a tight specification. They won the argument and more qualified people were appointed by AID to the plant in line with the magnitude of the projects.

*Beaufort's toilet*

Not all weaponry was 'high-tech'. In 1942 Holdens received a request to develop a Jungle Cart for the troops in New Guinea. The troops were trying to get supplies over the Kokoda Trail and there was thick mud, steep slopes and all sorts of obstacles. Woodville was asked to make up a sample Jungle Cart that was extremely light, capable of being easily dismantled into small loads and quickly reassembled, and stand the shock of being dropped from a plane. They would need large wheels and be easy to push.

The final sample was about the size of a pram and my father, accompanied by two of the Woodville designers, took it by train to Melbourne to the Ministry Building in Collins Street where Laurence

Hartnett was located. Hartnett had Army representatives present, who observed its arrival and dismantling and subsequent carrying up of the parts several floors to Hartnett's office, where it was reassembled, again before the representatives. My father had been instructed to leave one of his men outside the building.

The showing went well, whereupon Hartnett asked one of the designers to take it to the window, open it and heave the cart out onto the pavement below. The man stationed below successfully pushed the cart away and so it was deemed to have passed. Holdens were in production by October but the Australians recaptured Kokoda on November the 3rd and the need for the Jungle Cart diminished and my father's notes suggest that not many were made and regrettably there is no photographic record of this wonderful conveyance.

Whilst these are some of the more light-hearted incidents from my father's notes they do illustrate the extraordinary manufacturing talent that existed in Australia coupled with the machinery and equipment to produce almost anything. I can but lament that these seem to have now gone. Perhaps today Pete Seeger would write:
*Where have all the manufacturers gone, long time passing,*
*Into Service Industry personnel, everyone.*