

**ARMS PRODUCTION AND WAR SUPPLY
IN SOUTHERN AFRICA
1939 - 1945**

**LIMITATIONS OF THE INDUSTRIAL WAR EFFORT
OF SOUTH AFRICA AND ZIMBABWE
DURING THE SECOND WORLD WAR**

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DEDICATION

To my wife Susan.

May your dreams come true.

ABSTRACT

When the Second World War broke out in 1939, South Africa and Zimbabwe joined the war on the side of the Allied Forces, against Nazi Germany. The military exploits of units and individuals from both countries as they fought in East Africa, North Africa, Europe, and the Far East, have been well documented. On the home front, the countries of Southern Africa were required to supply the Allies with raw materials which were so vital to the Allied war effort. At the same time, the region could not receive from Europe and America the machinery, tools and other industrial products necessary to sustain these colonial economies in war conditions. This led to a small-scale war-driven Import Substitution Industrialisation which included arms manufacture for the Allied war effort. This industrial war effort of Southern Africa has not been well documented.

This thesis will discuss the production of munitions of war in South Africa and Zimbabwe as a contribution to the study of the effects of the Second World War on Africa. The thesis will argue that South Africa was not well prepared for the industrial war effort mainly because there were few large factories which could be readily converted to munitions production. Such factories had to be built from scratch. Machinery for these factories had to be imported or made locally at the expense of quality. There was also a shortage of technically skilled manpower leading to the racially-charged principle of "dilution of labour" which was complicated by the existing "job colour bar" in the factories. Equally important for South Africa was the fact that there was a significant political opposition to the war effort before and during the war.

Zimbabwe's industrial war effort was small mainly because the country's technical, financial and manpower resources were small. Also, the Government of Southern

Rhodesia, while publicly preaching the importance of industrialisation, in practice discouraged secondary industries in favour of agriculture and mining. The consequence of this was that, besides the establishment of training schools for Commonwealth pilots, Southern Rhodesia's greatest contribution to the Allied war effort was the production of food and strategic minerals. By the end of the war, secondary industries were still being considered as activities of a secondary nature in the total colonial economy of Southern Rhodesia.

This thesis will further argue that rather than stimulating local industrialisation, the policies of the Governments of South Africa and Southern Rhodesia in some ways actually retarded the growth of secondary industries during the Second World War. The net result was that South Africa's contribution to the war effort in technical, financial and manpower terms was much smaller than that of other Dominions of her stature. Thereafter, as white politics swung more to the right after the war, the need to maintain the momentum of a war-driven industrialisation led to the excessive exploitation of African workers in both countries. Unlike in some other parts of the British Empire, the war effort of the countries of Southern Africa did not produce a sense of African advancement. For the economic consequence of the Allied war effort was the increased exploitation of the African worker. In the political sphere, the war effort also helped to swing the settler colonialists to the extreme right and delayed the establishment of democratic systems of government for another forty years.

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ABBREVIATIONS

AE&I	African Explosives and Industries Limited
ARMSCOR	Armaments Corporation of South Africa
BTI	Board of Trade and Industries
COFAC	Central Ordnance Factories
COTT	Central Organization of Technical Training
DDT	Dichlorodiphenyltrichloroethane
DGS	Director-General of Supplies
DGTS	Director-General of Technical Services
DGWS	Director-General of War Supplies
DTS	Director of Technical Services
EATS	Empire Air Training Scheme
EGSC	Eastern Group Supply Council
EPT	Excess Profits Tax
ESCOM	Electricity Supply Commission
FPC	Food Production Committee
ICI	Imperial Chemical Industries
IDAC	Industrial Development Advisory Committee
IDC	Industrial Development Commission
ISCOR	South African Iron and Steel Corporation
MFU	Matebeleland Farmers Union
MIC	Military Industrial Complex
MPB	Munitions Production Board
NAZ	National Archives of Zimbabwe
NP	National Party
NPS	National Physical Laboratory
NSCB	National Supplies Control Board
OB	Ossewa Brandwag(Sentinels of the Ox-Wagon)

RADAR	Radio Detection and Ranging
RAF	Royal Air Force
RAR	Rhodesia African Rifles
RATG	Rhodesia Air Training Group
RAU	Rhodesia Agricultural Union
RISCO	Rhodesia Iron and Steel Corporation
RNFU	Rhodesia National Farmers Union
ROFAC	Rhodesia Ordnance Factory
RRAF	Royal Rhodesian Air Force
SAA	Small Arms Ammunition
SAR&H	South African Railways and Harbours
SOFAC	Salisbury Ordnance Factory
TNT	Trinitrotoluene
UDF	Union Defence Force
UDI	Unilateral Declaration of Independence
USSR	Union of Soviets Socialist Republic
VFTPC	Victoria Falls and Transvaal Power Company
WSB	War Supplies Board
WSC	War Supplies Committee
ZISCO	Zimbabwe Iron and Steel Corporation

CHAPTER ONE - INTRODUCTION

Problematising Military Industries In Southern Africa

In the twentieth century, the industrial manufacture of armaments has become a critical factor in determining the war potential of nations.¹ When the Second World War broke out in 1939, a leading British economist observed that:

War, nowadays, is an industrial proposition. It is more influenced by the science of economics than by the art of strategy. The present war will not be won on any playing-fields, at Eton or elsewhere, but in the mines and workshops of a thousand grimy industrial towns.²

Equally, the crucial importance of manufacturing in wartime has stimulated the economies of some belligerent countries where other conditions for industrial expansion were favourable. However, in developing countries, arms production has seldom been an inducement for the growth of dependent peripheral economies, because arms production industries are often not profitable on a small scale. Very often, political and questionable security considerations have at the same time induced developing nations to start local military production lines, even at the detriment of the local economy.

The debate as to whether in Southern Africa the Second World War revolutionised the underdeveloped economies from mainly producers of minerals and agricultural primary products to become newly industrialised manufacturing economies, or whether the war merely stimulated a process that was already underway, or whether it actually retarded such development, has not yet been convincingly concluded. In the case of South Africa and Zimbabwe, there is still much to be said for both sides of the debate. What appears to be agreed upon by many historians is that the Second World War was an important

turning point in the political and economic development of Africa in general and of Southern Africa in particular.³ The war is often taken as an important benchmark in the periodisation of the industrial processes of the region. Yet, curiously, very few historians have investigated the role of war-related industries in the secondary industrialisation of the region. Their readers are often left with no option but to believe that the establishment of factories during the war was a sine qua non for the secondary industrialisation of South Africa and of Zimbabwe, even though little evidence is presented and few examples of war-related production activities are shown which led directly to the process of industrialisation.

This thesis seeks to relocate arms production into the debate on the industrialisation of Southern Africa. The available literature has tended to emphasise manpower issues in the discussions of the region's industrialisation.⁴ This was so mainly because of the politically-charged atmosphere created by minority white rule over an overwhelmingly black majority population in both South Africa and Zimbabwe. Because of this political anomaly, every important debate was seen as white versus black, and right versus left or west versus east, even during times when the two groups were supposed to be on the same side, as during the Second World War. Now, in this post-apartheid and post-cold war era, some fundamental questions must be asked again without the racial and political constraints of the immediate past.

As far as arms production and the industrialisation of Southern Africa are concerned, a number of vital questions have not been asked. Which factories produced arms in South Africa and in Southern Rhodesia during the war? What type of arms did they produce

and how did they produce them? When did actual production start and when did it end? How many people worked in these factories and what was the gender and racial composition of this work force? What were the technical problems that were encountered in these factories and how were they resolved? How many items were actually produced and at what cost? Answers to these questions would go a long way in explaining the relationship between arms production and secondary industries in the two countries. Perhaps in the years immediately after the Second World War it was current news that certain factories produced war products or that they provided certain war services. However, more than half a century after the war, it becomes necessary to start by reminding readers that there really was an industrial war effort in the region.

Almost all current discussions on arms production in Southern Africa start with Armscor, yet it only started producing armaments for the apartheid regime in 1964.⁵ It is important to note that in its entire history Armscor has never managed to produce the quantity and variety of arms and ammunition as those produced by the Union factories for the Allied war effort during the Second World War. Even with the short lived apartheid nuclear capability scare and Denel's much-publicised Rooivalk helicopter gunship,⁶ the question can still be asked whether at any time South Africa really possessed what has come to be called the Military-Industrial-Complex (MIC).

It was Dwight D. Eisenhower, ex-general and retiring President of the United States of America who first used the term Military-Industrial-Complex in his presidential farewell address in 1961. Eisenhower warned the American nation of the "conjunction of an

immense military establishment and a large arms industry." He added that the United States:

must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military – industrial complex. The potential for the disastrous rise of misplaced power exists and will persist.⁷

In order to understand the MIC, even the leading American theorists were sent scrambling as far back as the American War of Independence, through the American Civil War, the First World War and the Second World War to try to put into context what Eisenhower had been talking about in 1961. One such prominent theorist came to the conclusion that the MIC as a topic had for a long time suffered from historians' neglect, that without the time dimensions which constitutes the historian's framework, the MIC was denied its proper depth and breath. He went on to explain that:

"For whatever reasons, as long as historians avoid facing the issues of power head on, subjects like the MIC will be denied the time perspective, which can so enrich social scientists' concepts, whose theories and models tend to be restricted by their belief that they need go back no further than World War II to understand the present-day MIC. By training and instinct, the historian knows better."⁸

In apartheid South Africa, the said "disastrous rise of misplaced power" was evident in the militarisation of South African white society which the state and Armscor justified as necessary in their fight against an erroneously perceived Communist take-over. The Cold War connotations of the MIC might partially explain the narrow focus on Armscor by the few historians who have written anything on arms production in Southern Africa.⁹ It may also partially explain why leading European military industrial companies continued to supply Armscor with advanced military technology (including nuclear technology) at a time when the United Nations were talking of military and economic sanctions against

the apartheid regime.¹⁰ In the historiography of South Africa it is therefore evident that there is a "historians' neglect" of the subject of the MIC before the Cold War rhetoric of Armscor. There is a need to trace the historical development of arms production in the region up to and including the Second World War, in order to understand the role of arms production in the industrial development of the region.

The next crucial question is whether military industries in general can really be considered to be economically viable. In developed countries, arms industries have been justified in terms of the existence of "spin-offs". The argument is that there is a transfer of technology from military to civil industry. Expenditure on military research and development is said to produce new knowledge, techniques and materials which may have direct civilian application. Such examples as the standardisation of components and production-line systems which is essential to the machine tool industry have been evoked to justify arms industries. The iron and steel industry has also been cited as the result of an industry that developed to cater for the requirements of heavier armaments which found alternative applications in civil engineering.¹¹

However, the "spin-off" assumptions have been challenged even in developed countries. K.E. Boulding has highlighted the huge internal "brain drain" associated with European military industries from the time of Achilles to the nuclear age. He argues that, economically, it was the defeated countries (Germany and Japan) who won the Second World War. These countries became psychologically demilitarised societies and were able to devote virtually all their intellectual and technological resources to getting richer. Both countries achieved economic development miracles within two or three decades while

the men who should have been designing development technology in the United States and the Soviet Union were probably building missiles and other sophisticated devices of assured mutual destruction. This directly led to the fall of the Soviet Union and contributed greatly to the relative decline of the American economy since the 1970s.¹²

Boulding, writing from a 1987 perspective makes the conclusion that:

The awful truth seems to be that swords make pretty miserable ploughshares; they are the wrong kind of material and very expensive. If we want ploughshares, it is much better to make them directly and to put research into them directly¹³

In South Africa, the factories that produced arms and ammunition during the Second World War were not always a result of import substitution strategies for the local market. The best of these factories, like the Royal Mint and the Imperial Chemical Industries(ICI), were virtually transplanted in toto from England.¹⁴ The capital which they used was British capital, and the munitions produced were for Allied defence (more properly for Imperial defence). After the war, these factories had to close down and many residual military materials and tools had to be destroyed because they could not be adapted for civilian use. The real mark which the arms industries made was the enormous drain of local raw materials and the huge diversion of local cheap labour which in the long run arguably proved detrimental to civilian industrial development both during and after the war.¹⁵

Under the later apartheid regime, arms production resulted in a high dependence on imported (mostly smuggled) components. The cost of these components absorbed much of the potential foreign exchange savings of local production. Also, there were direct and indirect production costs that made domestic production even more expensive for the national economy than importing the same equipment outright.¹⁶ But, of course, these

costs were justified in terms of national security, a questionable assertion which was frequently exposed when the metropolitan suppliers periodically restricted the vital supplies of components and spare parts. This dependent manufacturing effectively made apartheid armaments industries hostages, making them most vulnerable to western political and economic blackmail. The paradox was not unique to South Africa, for it has been observed in other developing countries which have also been accused of:

irrationally producing armaments that cost more in total expenditures and/or foreign exchange than they would if imported outright. The overriding objective of such arms production is not to save or minimise costs through domestic manufacture, but rather to maximise public expenditures on, and hence profits in, domestic capital goods and machine-building industry – even at the cost of high expenditure of foreign exchange. These high expenditures (not coincidentally) benefit the foreign producers who are engaged in joint ventures with local producers.¹⁷

Let us now turn in a preliminary way to Southern Rhodesia. Southern Rhodesia's industrial war effort during the Second World War was tied to that of the Union of South Africa right from the beginning. The main objective of the War Supplies Committee formed in 1940 was, "to examine the resources of the colony for the manufacture of munitions and civil supplies, in co-ordination with the Union of South Africa."¹⁸ Most striking, however, was the similarity of the two countries' arms and ammunition production processes and their organisation. It appears as if Southern Rhodesia was acting as a branch of the South African arms industry, and most of her products were made to fulfil orders given to the Union of South Africa by the Allies. The similarity in the history of the organisational development of the war effort in the two countries is also striking. When the Union of South Africa established the Director-General of War Supplies at the beginning of the war, Southern Rhodesia established the War Supplies

Committee. Both organisations were transformed to combine their original functions with civilian goods production under the Director General of Supplies and the Department of Supplies respectively, and both did that in 1943. When the Union established the Industrial Development Corporation, Southern Rhodesia responded with the Industrial Development Commission for the same purpose.¹⁹ It is almost as if Southern Rhodesia was a smaller mirror image of the Union of South Africa in all the phases of the war effort and in their relationship with civilian industry.

Southern Rhodesia was therefore clearly dependent on the Union of South Africa in technological development, in arms manufacture in particular and in the industrialisation process as a whole. It was an example of a case of an economy in "the periphery of the periphery", depending on another dependent economy. It is also clear that at no time during the war was Southern Rhodesia able to overcome the basic problems of shortage of machine tools, inadequate skilled manpower and foundry resources problems which formed the basis of its dependence on South Africa.²⁰ Also, the conflict between local capital in Southern Rhodesia and South African capital affected the quantity and quality of Southern Rhodesia's manufactured products and that conflict was very much evident in the area of arms production. In fact, it was that conflict of capital that stifled the continuation of arms production in Southern Rhodesia after the war.

Southern Rhodesia's post Second World War history is dominated by two events: the Federation of Rhodesia and Nyasaland, 1953-1963; and Ian Smith's Unilateral Declaration of Independence(UDI), 1965 - 1979. The former period was not very eventful in the field of arms manufacture as the country's defence and foreign policies

were dictated from London and therefore dependence on the United Kingdom was total. After 1965 the economy of Rhodesia was subjected to United Nations sanctions. Rhodesian propagandists claimed that Ian Smith's Security Forces were able to withstand a protracted guerrilla war because Rhodesian industry was able to manufacture those war materials so vital to the continuation of the war.²¹ Some industries such as Willowvale Motors, Trevor Davies (Ltd), K.E.W. Engineering and others are said to have remained viable during the sanctions period only because they were engaged in the manufacture of war equipment which the government readily bought. What is not normally highlighted is the fact that these factories were merely engaged in the assembling of parts smuggled into the country through South Africa. Technology and manpower for servicing sophisticated equipment and the pilots who flew smuggled helicopters came from South Africa. The so-called Rhogun²² advertised in the Rhodesia Herald in the 1970s was actually an Israeli Uzzi sub-machine gun which was assembled in South Africa and distributed in Rhodesia.²³ The three countries were partners in sanctions-busting and Rhodesia could never have sustained the war for such a long time without South African backing on the industrial front, on the economy as a whole and in the war effort. The Smith regime was even more dependent on South Africa not only in the acquisition and maintenance of weapons of war, but also in its whole defence policy which was based on manipulating the Communist scare of the Cold War to justify the military sustenance of minority white rule over an overwhelmingly black population. If United Nations sanctions were "a blessing in disguise"²⁴ for some sectors of the Rhodesian economy between 1965 and 1980, in the field of arms production, sanctions did not lead to the development of any self-sustaining arms manufacturing industry. A

Military Industrial Complex did not develop in Rhodesia. Rather, sanctions deepened Rhodesia's military dependency on South Africa.

Review of Relevant Literature

South Africa. An interesting debate on South Africa's industrial contribution to the war effort started during the war itself and continued up to the early 1950s, after which it became marred by local political developments. Michael Vane published a pamphlet in March 1943 entitled, Apathy Supercharged: A Criticism of Our War Effort. Vane asked the question, "Are we doing everything in our power to defeat the enemy?"²⁵ Between September 1942 and January 1943, some five articles had been published in The Reef newspaper which chronicled the work being done by gold miners in Transvaal towards production of munitions. To follow this up and as an answer to Vane's question, a brochure was published by the Transvaal Chamber of Mines in April 1943. It was entitled, War Work on The Witwatersrand: Munitions Making in Gold Mine Workshops.²⁶

The brochure was basically a propaganda instrument to dispel the rumours that most Afrikaner miners were showing apathy to the war effort. It contained very little if at all on the economic impact of that war effort either on the gold mining industry or on the economy as a whole.

Another propaganda instrument was G.H. Swingler's undated pamphlet, The Union of South Africa Works for Democracy Through its Industries; Through its Manpower, and its Women. It was published in the United States of America. Swingler scorned the erstwhile popular notion that Hitler smiled when he heard that, South Africa, whose total armaments industry then consisting of a small factory for the production of .303

ammunition, had declared war on Germany.²⁷ Swingler went on to write that in a few months, the Union was manufacturing and using the implements of war on a scale comparable to any of Hitler's opponents. He asserted in partisan fashion that "The story of the unparalleled rapidity and vigour of this war effort is the story of the emergence of a new industrial South Africa".²⁸

In 1943, H.M. Moolman published another pamphlet in Washington entitled, South Africa at War. It highlighted how South Africa fitted into "the strategic picture" and work on "the industrial front". The pamphlet is very informative but it echoed the propaganda works already published.²⁹ However, this particular one was aimed at influencing the United States of America to give more support to South African industry in view of British difficulties in doing so.

After the war, H.J. van der Bijl made an official record of the Union's contribution towards the war effort. The report was entitled, A Record of the Organisation of the Director General of War Supplies (1939 - 1943) and Director-General of Supplies (1943 - 1945).³⁰ It summarises the war production programmes, technical production, manpower issues, commercial production, control of commodities and civilian supplies. The report can be taken as the official testament of South Africa's contribution to the war effort. As such, however, it avoids (perhaps deliberately) any serious discussion of the economic problems that might have been caused by the war effort. It admits that grave shortages of civilian supplies did occur and the war supplies programmes themselves were threatened with closing down.³¹ This is said to have led to criticism from the public and from some industrialists. These substantive criticisms were,

however, belittled in the report and brushed aside in one sentence thus, "Criticisms, when they were helpful, were welcome, but even ill-informed criticisms, sometimes amounting almost to positive abuse, at least served some purpose – they were a safety valve for the pent up frustrations of the would-be profit makers."³²

In 1946, A.G. Thomson compiled a separate report for the South African Federation of Engineering and Metallurgical Associations on the work of the metal industries during the war. The report is entitled, "The Years of Crisis".³³ It is a vital source of information on the contribution of the metal industries to the war effort. It also gives account of individual metal firms that were involved in munitions production, listing altogether 78 such firms, each giving its own story. However, the majority of the articles in the report are basically a eulogy of each firm's role and contribution to the war effort. There is very little analysis of economic questions of viability, profit, linkages and spin-offs. The accounts start and end with the individual firms. In summarising the report, however, Thomson observed that, "Some wartime manufactures are doomed to disappear, and were in fact, established with the sole object of alleviating temporary difficulties of supply."³⁴ The "industrial-front heroes" tone set by van der Bijl and Thomson is repeated in many post-war studies without question. Even respected scholars like Eric Rosenthal, A.J. Norval, D.H. Houghton, Stuart Jones³⁵ and many others take the view that the industrial war effort was a stimulant for the industrialisation of South Africa.

Even David Killingray and Richard Rathbone, in their important book, Africa and the Second World War, write that, "The Second World War was an experts' war, a conflict in which scientists ceased to be viewed as eccentric 'boffins' and were, rather, drawn into

the very heart of planning at the highest levels.³⁶ Yet unfortunately, there is no mention in that book of such scientists or expert in the military in Africa except for the occasional agricultural experts. This, I think, is a serious omission. Even though the industrial war effort of South Africa and Zimbabwe were small by international standards, and were full of problems as this thesis will seek to demonstrate, the fact still remains that these two African countries actually set up factories specifically for the manufacture of arms for the Allied war effort. Their experience, small though it was, deserves a chapter in any book that discusses Africa's war effort during the Second World War.

One early analytic attempt was R.B. Spiro's 1944 publication, Rationalisation of South African Industry: Suggestions for Industrial Post-War Planning.³⁷ Spiro observed that most South African manufacturers during the war readily admitted that their products were more costly than similar products in other countries. He noted that this did not only concern products made by the war-created industries, but also products which were manufactured in pre-war times. He also noted that if one asked a South African manufacturer why his costs were higher, one would hardly get a satisfactory reply. After a thorough examination of the poor performance of South African industries in 1944, Spiro suggested that the only way forward was the rationalisation of all South African industries in line with international trends.

Another important contemporary analysis is that made by T. Gillooly in his Development of South African Industry, published in 1946.³⁸ Gillooly analysed industrial census returns from 1938 to 1942 and concluded that while the general trend was one of growth, certain industries like building declined and that the growth of the shipbuilding industry

was "an example of a local industry flourishing to an abnormal extent under purely fortuitous demand, a growth which must needs perish when the artificial protection afforded by the circumstances of war is no longer present."³⁹ Not everyone agreed with this link between the war and industrial capacity.

One of the greatest marshallers of South African war-time industry, H.J. van Eck, strongly castigated the prophets of post-war economic doom such as Gillooly.⁴⁰ In his South African Industry: Post-War Prospects, van Eck disagrees with the view that "mushroom industries" were established during the war, that these industries would disappear after the war and that secondary industrialisation in South Africa would face a post-war recession. He pointed out that there were many factors that had contributed to secondary industrialisation in South Africa, such as the availability of resources, improved management, increase in skill especially among the women, and wholehearted co-operation on the majority of employees. Van Eck went on to state that it had to be obvious that the great achievements of secondary industry during the war were based on the sound foundations that had already been laid before the war and certainly did not result from the so-called mushroom growth during the war. He wrote that, "Had the war not come many South African industries would have developed much further and much faster than during the war because they would have been able to get plant, raw materials and manpower."⁴¹

In a more recent 1983 publication, A.B. Lumby superficially attacked the views expressed by van Eck.⁴² In two very informative chapters on industrial development in South Africa before and after the war, Lumby expressed the opinion that South Africa's

industrial policy up to 1939 was "partially self-defeating". He asserted that industrial expansion relied too heavily on gold mining to the extent that it became a, "parasite feeding upon the very sector which, so it was planned, it was eventually to replace."⁴³ It was only the outbreak of the Second World War which led to the establishment of major new branches of industry. This, Lumby wrote, "was particularly the case in the iron, steel and engineering sectors for the manufacture of munitions and the production of armoured cars."⁴⁴ But that is as far as Lumby goes; having made his sharp attack he made no follow up of his approach to link arms production to secondary industrialisation in South Africa.

In their multi-volume account of the South African Forces in the Second World War, H.J. Martin and N. Orpen devote a whole volume (volume 7) to "Military and Industrial Organisation, 1939 - 1945."⁴⁵ This is perhaps the most exhaustive account of the country's industrial war effort. The book provides vital statistics and a great deal of industrial information, presented with the attention to detail characteristic of a military operational report. The contribution of individual firms is highlighted, with the gold mining industry and the South African Railways and Harbours clearly outstanding. However, the book is basically a eulogy of South Africa's war effort. It does not compare the Union's contribution with that of other Dominions, and it completely ignores the political climate of the war period which was so glaringly divisive.

In the second volume of his Smuts biography, "The Fields of Force, 1919 to 1950", W.K. Hancock observed that South Africa was militarily naked when the war broke out in 1939.⁴⁶ This, Hancock concluded, was mainly because of the incompetence of General

Hertzog and his Minister of Defence, Oswald Pirow. This incompetence was compounded by the fact that "Pirow's tenure of office had coincided with a period of boom during which neither the government nor the industrialists, nor the people of South Africa were willing to contemplate any substantial switch of economic resources to military preparations."⁴⁷ Hancock observed that when the war broke out "politics inside the boundaries of the Union constituted the main impediment to military deployment beyond these boundaries and to civilian economic mobilisation."⁴⁸ South Africa, which had a bigger total population than Australia, contributed less manpower and economic resources to the war effort. Hancock argued that the Australians were able to use population and nation as interchangeable terms, and therefore their volunteer contribution was greater. On the other hand, the South African population was not homogenous and because of that their war effort was comparatively small.⁴⁹

In an entry to The Oxford Companion to the Second World War,⁵⁰ Ian Phimister points out that the majority of unenfranchised Africans saw no point in getting involved in a white man's war, in which they as an oppressed people did not figure anywhere in its aims. At the same time, "a large section of the ruling white minority were strongly opposed to the war. Embittered by the British victory in the South African War (the "Anglo Boer War" of 1899 - 1902) and alienated by the subsequent policy of Anglicisation, most Afrikaners wanted nothing to do with what they saw as the UK's latest war. Only English-speaking whites, actually a minority of a minority, were unequivocally prepared to die for King, and a far-away country."⁵¹

In a recent work entitled Manufacturing Apartheid, Nancy L. Clark approaches the industrialisation of South Africa from the point of view of the role of state corporations like ISCOR, ESCOM and the IDC. While pointing out that, "state corporations were central to South Africa's wartime definition of the country's industrial methods and labour utilisation,"⁵² Clark observes that during the war the two most serious challenges to their operations were, "first the increasing propensity of their private partners to increase profits at the expense of state enterprises; and second, the difficulties in exerting control over workers, black and white under changing industrial conditions."⁵³

The result of these developments was the declining financial returns for the state corporations and growing profits for the private firms. For example, ISCOR's profits fell by half between 1939 and 1942 despite price increases in 1941 and 1942. Also, in 1945, ESCOM recorded a loss for the first time in its history at a time when its private competitor, the Victoria Falls Power Company, netted more than £6 million profit. Clark concludes that besides creating the ideal opportunities for the industrial expansion of South Africa, "the war had also exposed the serious contradictions inherent in such development."⁵⁴

As a modern study of state corporations, Clark's book still completely ignores any other scholarship on parastatals in the rest of Africa. One of its critics observed that, "While citing a number of works on Asia, Europe and Latin America...there is not a single entry of African scholarship outside South Africa in the bibliography (with the curious exception of Frederick Cooper's - *On the African Waterfront*)".⁵⁵ This tends to locate Clark on the wrong side of the debate on the thorny notion of South African

exceptionalism, a concept which Mahmood Mamdani seeks to destroy.⁵⁶ By highlighting the similarities and common problems in the industrial war effort of South Africa and Zimbabwe, this thesis aspires to put another dent in the theory of a South African exceptionalism or special historical path in Africa

In his 1977 PhD thesis, D.E. Kaplan singles out the increase in base metals output by ISCOR as the most outstanding feature of South African wartime industrial development. He acknowledges though, that similar expansion occurred in engineering and in a range of capital goods industries. Kaplan, however, concludes that, "many of these developments were 'precocious' in the sense that they owed their origin to particular wartime conditions which 'allowed' South African industry to develop the manufacture of a number of sophisticated products which, given 'normal times', would not have occurred until a much later date."⁵⁷

For all this, Kaplan's core focus is on class conflict, capital accumulation and the state. His main statement is that before 1948, secondary industry was able to accumulate surplus value. The means used by the state, that of the increased coercive exploitation of black labour, became necessary, according to Kaplan, for the further increase of the rate and mass of surplus value. As such, he goes on to argue, the material conditions of production were not compatible with the introduction of blacks into the state structure because this would have slowed down the rate of accumulation of surplus value. Kaplan is at pains to prove that "South Africa exhibited a very 'pure' form of bourgeois democracy"⁵⁸ because according to him the state, "never exhibited even the traces of dictatorship or army rule nor were the state bureaucracy ever to emerge as an

independent social force." Kaplan's social analysis approach is followed up by other social formation materialist theorists such as Graeme Bloch.⁵⁹

A more recent (and perhaps more relevant) debate on South Africa's war effort is the role played by African, Coloured and Indian South Africans during the First and Second World Wars. The most prominent works on this topic are, of course, Albert Grundling's Fighting Their Own War, K.W. Grundy's, Soldiers Without Politics, and Ian Gleeson's The Unknown Force.⁶⁰ The main theme in these publications is the highlighting of the fact that there were African, Coloured and Indian soldiers who fought and died for the Union in both World Wars. The official South African view was that non-white people could only work but not fight for the Union, and yet they did fight, some of them armed only with assegais.⁶¹

However, most of these late trumpets of non-white heroism tend to focus more on the exploits of "black" soldiers in the various theatres of war than on the home-front, which is the focus of this thesis. Bill Nasson correctly diagnoses this deficiency in his review of Ian Gleeson's The Unknown Force. Nasson wrote that:

"What the reader never gets, though, is a proper sense of the range and complexity of African, Coloured and Indian responses towards the Union in the crises of 1914-1918 and 1939-1945, nor of the economic and social motors of rural and urban volunteering."⁶²

This thesis will, among other themes, focus on the range and complexity of non-white participation in the industrial war effort of the Union of South Africa and of Southern Rhodesia during the Second World War. My findings are that the "dilution" of skilled and semi-skilled labour with non-white workers in Union war factories was far more