

# ANTI-AIRCRAFT ARTILLERY IN THE SECOND WORLD WAR

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## **Introduction**

At the outbreak of the Second World War in September 1939 the only anti-aircraft guns available in the Union of South Africa were eight 3-inch 20-cwt guns. This fact not only points to the grave conditions under which the Union Defence Force was to defend its harbours and other strategically important installations, but is also indicative of the fact that a formal anti-aircraft organisation in pre-war times was virtually non-existent.

The serious shortage of effective aerial defence is also emphasised by the fact that the above-mentioned guns and six searchlights (which accounted for all anti-aircraft equipment in the Union) were taken on charge by 1 Anti-Aircraft SA Artillery Brigade and despatched to East Africa shortly after hostilities started. Light machine-guns were the only protection remaining to SA ports.

## **New Equipment**

The first remedial step taken by Union Defence Force authorities was to place a comprehensive order for new anti-aircraft equipment in February 1940 through the office of the High Commissioner, London to the British War Office.

The order, including 122 3,7-inch mobile anti-aircraft guns, 60 predictors, 60 height range finders and 108 light anti-aircraft 2-pounders, was very realistic, but unfortunately the position in England was such that for some time no anti-aircraft equipment could be spared at all; and even when some could be released it arrived very slowly in South Africa. Enquiries were therefore made for possible supplies from the United States of America.

Equipment became available by 1942 and was distributed as follows on 23 April 1942:

- a. Table Bay: 5 3-inch anti-aircraft guns, 2 40-mm Bofors guns and 12 Sperry Anti-Aircraft Searchlights.
- b. Simon's Bay: 12 Sperry Anti-Aircraft Searchlights.
- c. Port Elizabeth: 12 Sperry Anti-Aircraft Searchlights.
- d. East London: 3 Sperry and 9 British Anti-Aircraft Searchlights.
- e. Durban: 2 3,7-inch Anti-Aircraft guns, 2 40-mm Bofors guns and 12 Sperry Anti-Aircraft Searchlights.

Apart from these allocations the following arrangements existed: a. Three Sperry Searchlights were issued to the School of Anti-Aircraft Defence and 1 Sperry and 3 British Searchlights were kept in reserve; b. a further 14 searchlights were on loan to the Coast Artillery stationed at Cape Town, Simonstown, Walvis Bay, Saldanha Bay, Port Elizabeth and Robben Island. To add to this still unimpressive picture it should be mentioned that those searchlights at Port Elizabeth and Saldanha Bay were immobile due to a shortage of special lorries.

Towards May 1942 the Commander-in-Chief South Atlantic made representations as to the necessity of strengthening the coast and anti-aircraft defences at Saldanha Bay with a view to its possible use as a convoy assembling port. The Admiralty was thus persuaded to despatch a further two 6-inch naval guns, eight 3,7-inch anti-aircraft guns and four 40-mm Bofors Anti-Aircraft guns to South Africa.

By the end of May 1942 the equipment position and distribution were as follows:

Station	3,7-inch Mobile	3,7-inch Mobile	3-inch Mobile	40-mm Mobile	90-cm HCD British Anti-Aircraft Search Light	120-cm Sperry American Anti-Aircraft Search Light
Cape Town	2	6	—	12	—	12
Durban	—	6	—	12	—	12
Simonstown	—	—	4	6	—	12
Port Elizabeth	—	4	—	6	—	12
East London	—	—	—	6	3	3
Saldanha Bay	—	—	—	—	—	—
Reserve with Director Air Force Training and Director Coastal Air Defence	—	—	—	14	10	8
On loan to Coast Artillery Search Light	—	—	—	—	5	—
	2	16	4	56	24	59

\* 3 without power plant.

After the hesitant start the equipment position improved rapidly. When Major General Loch, CB, MC, War Office Adviser on Coastal and Anti-Aircraft Artillery, carried out an inspection of Union Coast and anti-aircraft defences the disposition was improved on his advice. The distribution shortly afterwards (July 1942) appeared as follows:

Port	3,7-inch		AASLs
	Guns	Bofors Guns	
Table Bay	12	12	12
Simon's Bay	4	6	12
Port Elizabeth	4	6	12
East London	4	6	12
Durban	12	12	12
	—	—	—
<b>TOTAL</b>	<b>36</b>	<b>42</b>	<b>60</b>
	—	—	—

As the war progressed and more emphasis was placed on the Far East and also as a result of the increased American and British naval forces the threat against the Union ports grew less. It is, however, noteworthy that, in spite of a very small start, the anti-aircraft port defences grew into a respectable force when the Japanese threat was at its height.

#### AA Organisation

The Coast and Anti-Aircraft Directorate was formed on 20 February 1940 with headquarters at Wynberg Camp. This new Directorate was controlled by Lieutenant-Colonel H. E. Celliers, then Deputy Director of Coastal Artillery. Since this Directorate had very specific training requirements and problems, the Instructor of Gunnery and his whole staff were immediately transferred from the Coast Artillery Brigade to the Coast and Anti-Aircraft Directorate.

Training commenced immediately and all training and practice programmes were submitted to Lieutenant-Colonel Celliers who was responsible for the standard of training.

The armament officer of the Coast Artillery Brigade with two of his staff as well as two officers from the old Defence Electric Lights and Telegraph section were transferred to the new Directorate headquarters. All these transfers indicated that the new organisation would be capable of functioning as a separate entity. This was, however, not the case and Anti-Aircraft still functioned in close co-operation with the Coast Defence organisation.

A final programme of equipping the ports with anti-aircraft equipment was drawn up by Mid-August 1942. This programme was slightly amended as a result of increased availability of equipment. The final distribution of equipment was therefore, on 7 September 1942, as follows:

Port	3,7-inch		AASLs
	Guns	Bofors Guns	
Saldanha Bay	8	4	—
Table Bay	32	32	12
Simon's Bay	12	12	12
Port Elizabeth	12	12	12
East London	8	12	12
Durban	32	32	12
In Reserve	12	12	12
	—	—	—
<b>TOTAL</b>	<b>116</b>	<b>116</b>	<b>72</b>
	—	—	—

As early as 14 March 1940 the Chief of the General Staff was approached with proposals to separate the Anti-Aircraft organisation from its parent Coast Artillery Brigade. Some of the arguments put forward were:

- a. Coast Artillery required less specially trained men and could be operated by older members.
- b. Anti-Aircraft need to be more mobile.
- c. Anti-Aircraft and anti-tank gunnery are closer in the nature of their equipment and task and such a composite unit would be more in accordance with the British system.

These arguments were supported in August 1940 by the Director of Field Army Artillery. He asked more specific questions about the location and training of the anti-aircraft units. It soon became evident that anti-aircraft units formed for service in East Africa would have a completely different role from those employed in the defence of the sea ports. The position in June 1940 with regard to the anti-aircraft units was as follows:

- a. 1 Anti-Aircraft Brigade had one battery in East Africa.
- b. Two further batteries had only Lewis guns and were therefore hardly equipped for their task.
- c. 2 Anti-Aircraft Brigade had no guns. This Brigade's 5 and 6 Batteries were concentrated at Potchefstroom and were trained on Lewis guns.

The raising, training and administration of these units were under control of the mentioned Directorate, but as soon as they concentrated at Potchefstroom they became the responsibility of the Director of Field Army Artillery. The Artillery School at Potchefstroom had no equipment for the training of anti-aircraft gunners and with the exception of the Officer Commanding none of the staff was qualified to train anti-aircraft gunners.

In order to solve this deadlock the following conditions were put forward in August 1940:

- a. The dual authority over AA was to be reconsidered and either Director Field Army Artillery or Coastal Defence was to take over full responsibility.



South African gunners loading a 3,7-inch gun in East Africa.

- b. No more Anti-Aircraft Brigades should be formed until the equipment position took a considerable change for the better.
- c. If Director Field Army Artillery took full responsibility a suitable number of instructors should be transformed from Coast Artillery Brigades.
- d. Steps should be taken to ensure suitable accommodation for recruits, especially if the Director Field Army Artillery took over the responsibility.
- e. In the absence of the necessary equipment a Reserve Camp should be established in East Africa so that operational equipment could be used for training.
- f. Officer casualties should be replaced by promotion of suitable non-commissioned officers and not by transfer of Field Artillery officers.

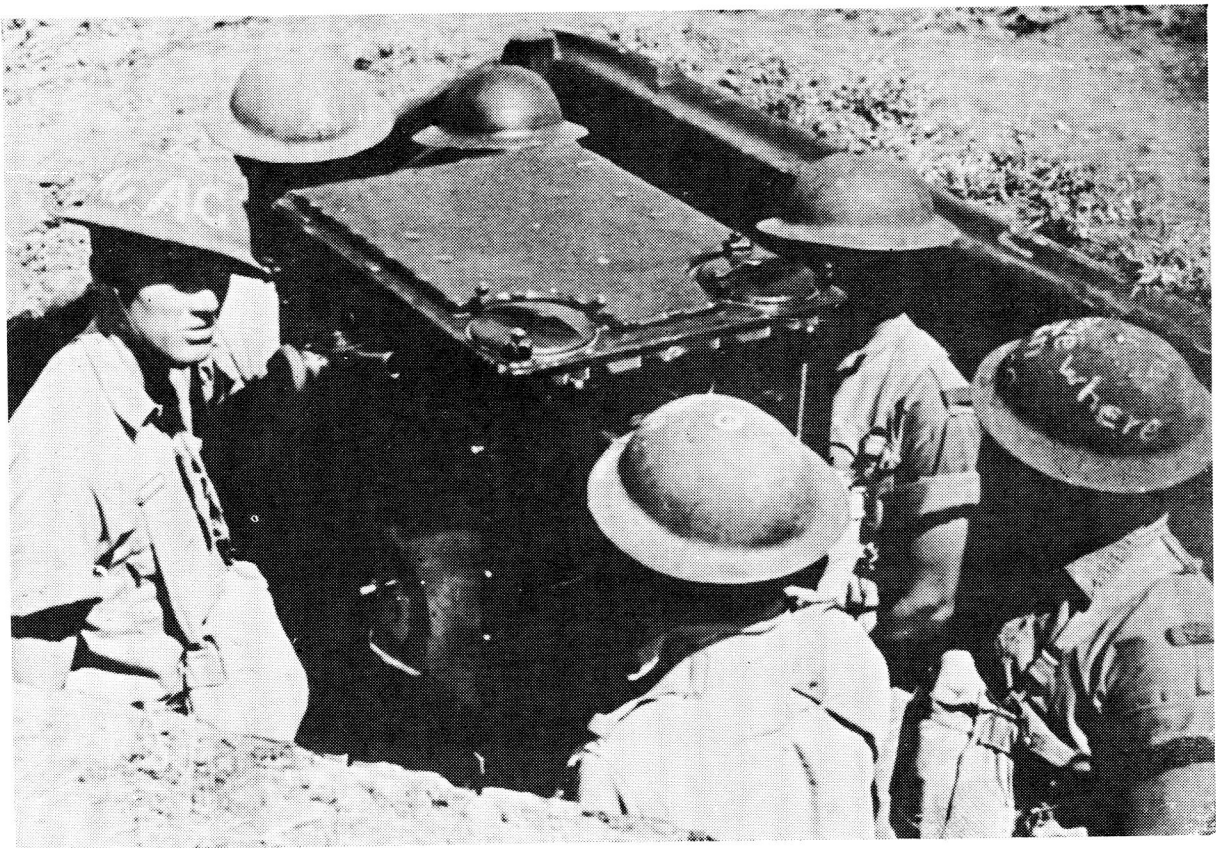
With this memorandum as a basis the various parties concerned were stimulated to set out their arguments which could lead to a solution of the anti-aircraft dilemma.

Lieutenant-Colonel Celliers was the first to react when he pointed out on 16 August

1940 that an anti-aircraft organisation closely linked with coastal defence was based on the British pre-war pattern and that on no occasion was his authority over this organisation formally terminated. He also pointed out that a considerable percentage of personnel in the Coast Artillery had completed anti-aircraft courses as well and that this interchangeability in itself proved that the two branches should stay closely together.

He argued that, although the Cape did not offer the ideal conditions for anti-aircraft training, the presence of the sea offered training facilities unlikely to be found at Potchefstroom. A further argument offered was that officers of the Anti-Aircraft and Coastal Artillery were even on the same seniority lists for purposes of promotion and that Coastal Artillery Permanent Force members were serving with the anti-aircraft units in East Africa.

These arguments carried some weight and even at Defence Headquarters there seemed to be agreement on one fact: the benefits of training over the sea certainly outweighed a number of other considerations. On 17



Predictor of a 3,7-inch gun in Kenya.

August 1940 the Deputy Chief of General Staff approved the control of the Anti-Aircraft to stay with the Deputy Director Coastal Artillery. It was declared from Pretoria that the fact that 1 and 2 Anti-Aircraft Brigades were concentrated at Potchefstroom was due to circumstances which it might be possible to overcome in the future.

The Brigade Commanders in East Africa (1 and 2 Anti-Aircraft Brigades) were informed of this decision by the Deputy Director Coastal Artillery on 30 August 1940. Because the whole problem of control was only straightened out after more than six months, the anti-aircraft organisation as a whole had suffered considerably. Attention was now turned to the organisation as such.

The decision on what personnel should be entered into the Anti-Aircraft now received attention. As soon as equipment became available personnel under the age of 35 would receive instruction in anti-aircraft gunnery and would then become available for drafting to Brigades in the field. This decision made 52 members of the Coast Artillery available on 5 September 1940 as the first draft for 1 Anti-Aircraft Brigade. The successive contingents were to assemble at Rosebank and sent off in groups of 50 or 100.

### SA Air Force and AA

Early in 1942 it was decided to expand the anti-aircraft organisation by creating South African Air Force Anti-Aircraft Regiments to man equipment at all the principal ports of the Union. This decision was based largely on the fact that the Air Force as a branch of the Service was drawing more recruits than any other Corps. The decision taken on 1 March 1942 was that the South African Air Force should take over the air defence of the Union, including anti-aircraft defence of the coast, but excluding Divisional Anti-Aircraft units.

As a consequence the existing Directorate of Coast and Anti-Aircraft Artillery was split into two Directorates under the Deputy Chief of Staff:

- a. Director of Coast Artillery at Cape Town.
- b. Director of Anti-Aircraft Training at Cape Town.

In so far as Divisional Anti-Aircraft units were concerned the Director Anti-Aircraft

Training remained responsible for the formation, organisation, training, maintenance, employment and equipment. This Directorate was also responsible for training of all personnel of the anti-aircraft units within Air Defence Groups in each coastal port. These groups comprised mainly Air Defence Units, Anti-Aircraft Units, Searchlight Units and Special Signals Units (Radar). The Director of Anti-Aircraft Training furthermore coordinated all matters of equipment concerning both Divisional Anti-Aircraft units and Air Defence Groups. For this purpose Director of Anti-Aircraft Training worked in close collaboration with the Director of Coastal Air Defence, a sub-section of the Director General Air Force, especially with regard to matters of policy.

The Director of Anti-Aircraft Training had under his control a School of Anti-Aircraft Defence and an Anti-Aircraft Depot.

As far as the Divisional Anti-Aircraft Units were concerned the following two types of units would be established:

- a. Batteries for a completely mobile role with troops in forward areas.
- b. Batteries for a mobile role where employment was contemplated on Army or Corps duties on Lines of Communication, Landing Groups or at bases.

For this abovementioned purpose 3 Anti-Aircraft Regiment was organised on a basis of a Rear Headquarters, one Heavy Anti-Aircraft Battery and two Light Anti-Aircraft Batteries. This unit was then used as a nucleus for forming of new Heavy and Light Anti-Aircraft Batteries. At the same time 1 Anti-Aircraft Searchlight Regiment served as an Anti-Aircraft Depot at Cape Town until such a depot could be formed.

The anti-aircraft units in the Air Defence Groups were also organised as regiments (South African Air Force). They comprised a composite group Rear Headquarters, one Heavy Anti-Aircraft Battery, one Light Anti-Aircraft Battery and one Searchlight Battery. The number of sections in each battery varied according to the equipment allotted.

The South African Air Force regiments then established were numbered from 21 to 26 and the batteries within each regiment were correspondingly numbered. (These unit num-



**1 SA Division Headquarters, Gazala Line 1942, a South African manned Bofors-gun position.**

bers were later changed to number from 50 to 55.)

There was still another type of anti-aircraft unit in existence. The Union Defence Scheme made provision for composite Brigade Groups on a part-time basis and each of these groups included a Light Anti-Aircraft Battery. The intention of these units, as far as the Anti-Aircraft was concerned, was that, in the event of a shortage of manpower, the full-time anti-aircraft units within the Air Defence Groups could be diluted with part-time anti-aircraft personnel.

The task of the School of Anti-Aircraft Defence was to train South African Artillery and South African Air Force gunnery instructors and potential officers in the ground operations room, battery work etc. All regimental training was carried out by the regiments.

Training was however, seriously jeopardized by the shortage of equipment. Two 3,7-inch Anti-Aircraft guns, four 3-inch 20-cwt Anti-Aircraft guns and eight 40-mm Bofors, all of which were being used primarily in an opera-

tional role were available. Training therefore had to be fitted in as a secondary consideration on this equipment.

Provision of personnel for divisional anti-aircraft units was made on the basis that the equipment should be manned, wherever possible, by South African Artillery personnel. For the Air Defence Groups, South African Air Force personnel were used as far as possible.

### **Early Operational Units and Reorganisation**

#### **1 AA Brigade**

The first Anti-Aircraft unit to depart for the theatre of war in East Africa was 1 Anti-Aircraft Brigade, South African Artillery. This unit was formed from a nucleus drawn from the Anti-Aircraft Battery, Coast Artillery Brigade, the only Anti-Aircraft unit in existence in South Africa at the outbreak of the war. Difficulties were however encountered in bringing the unit to its war-time establishment of 45 officers and 1 199 other ranks since it was not considered a good policy to bleed the existing unit of the Coast Artil-

lery Brigade too much. Also there was a noticeable reluctance under the members to sign the oath for service outside the Union. (Likewise 180 members of the Permanent Force members of the Field Artillery refused to serve outside the Union.)

Upon the arrival of the members at Potchefstroom on 15 May 1940 they were still almost 500 men short. Even when they left for Mombasa on 28 May they were still considerably under strength.

The Unit was deployed as follows in East Africa:

1 Anti-Aircraft Battery:

- No 1 Section at Nyoli Bridge
- No 2 Section at Makupa Road
- No 3 Section at Port Reitz Aerodrome
- No 4 Section at Golf Course.

Each of these Sections only had two 3-inch 20-cwt Anti-Aircraft guns. These rather lightly armed posts were held until 20 June when the rest of the Brigade arrived and the Mombasa area was fortified as follows by 2 Anti-Aircraft Battery:

No 1 Section : Magidi House, Shell House, Pratt House and Shell Aerodrome.

No 2 Section : Makupa Bridge, Devils Island, Cattle Sheds (2 posts), Water Works.

No 3 Section : Port Reitz Aerodrome, Old Quarantine Station.

No 4 Section : Port Reitz Aerodrome.

This position was even more fortified towards the end of the month when the Brigade manned no less than 27 posts in and around Mombasa.

This information is given merely as an indication of how an Anti-Aircraft unit is employed in the defence of a city since in an account of this scale no attention can be given to the detailed functioning of a unit.

The Brigade grew to almost full strength by December 1940. By 9 January the Brigade got its first warning of an impending move. On 11 January 1941 the Headquarters and 3 Sections of 2 Battery departed by train for Nairobi and Nakura. This move was the first of a series of advances when various



The 3.7-inch anti-aircraft gun in towing position.

batteries leap-frogged with the rapid Allied advance.

The various elements of the Brigade were concentrated at Berbera on 22 March 1941. The whole Brigade arrived in the Middle East in May 1941. At this stage the unit was under strength to the extent of 3 officers and 468 other ranks. In the Union this position was remedied by the drawing up of new establishments. A heavy Anti-Aircraft Regiment was to consist of 39 officers, 577 European other ranks and 517 non-Europeans. The officer commanding, Lieutenant-Colonel Jeffery took this opportunity to ask for proper equipment, since the unit was not equipped as a heavy Anti-Aircraft regiment. This request however, fell away on 1 August 1941 when the Unit was redesignated 1 Light Anti-Aircraft Regiment, South African Artillery for allotment to 1 South African Division. Similarly 2 Light Anti-Aircraft Regiment, South African Artillery was allotted to 2 South African Division.

These regiments were both provided with non-European personnel to complete establishments plus 20 percent reserve. After this had been executed 3 Anti-Aircraft Regiment was organised in the Union from the old 3 Light Anti-Aircraft Regiment and designated 3 Anti-Aircraft Regiment.

The reorganisation of 1 and 2 Anti-Aircraft Regiments was completed when each was divided into a Rear Headquarters, three Light Anti-Aircraft Batteries, one Light Anti-Aircraft Regimental Signals Section, one Light Regimental Service Section and one Light Anti-Aircraft Regimental Workshop Section.

## **The AA towards the end of the War**

### **Western Desert**

After the Anti-Aircraft regiments were reorganised as outlined above, their activities thereafter followed a set pattern. In November 1941 1 Light Anti-Aircraft Regiment filled a dual role in the battles of Sidi Rezeg when they were covering the west and south-west flanks of 7 Armoured Division: apart from protection against low-flying aircraft — several of which were claimed shot down or damaged — the Regiment was frequently engaged in an anti-tank role and claimed to have damaged or disabled an appreciable number of enemy tanks and armoured vehicles with their Bofors.

By August 1942 the El Alamein line had settled down and although the initiative was still with the Axis, while Montgomery gradually built up his strength, the Allied air supremacy was becoming more marked and enemy air raids were on a generally reduced scale. Indeed, until 28 August 1942 the only successes the Light Anti-Aircraft guns could achieve were in the shape of damage to two enemy planes, and these were registered in the first five days of the month.

The dispositions of the three batteries were: 1 Light Anti-Aircraft Battery covered 1 South African Infantry Brigade in the Central Sector; 2 Light Anti-Aircraft Battery reinforced with a gun from 1 Light Anti-Aircraft Battery, covered the Southern Sector; two Troops of 3 Light Anti-Aircraft Battery covered the Northern Sector, one troop being detailed for the protection on 1 Field Regiment, South African Artillery and another for the Anti-Aircraft protection of 1 South African Division's Main Headquarters.

During September the position with regard to enemy aircraft remained unchanged. The Battle of El Alamein was, however, reaching its climax by 23 October 1942 and the light Anti-Aircraft units became more active. During October 8 897 rounds of High Explosives were fired with considerable success.

The record for 1 Light Anti-Aircraft Regiment for the period 18 November 1941 to 31 October 1942 was brought to:

Enemy aircraft destroyed	86
Enemy aircraft probably destroyed	38
Enemy aircraft damaged	197
	<hr/>
Total damaged or destroyed	321

The Allied air superiority began to show its effects from 24 October and this minimised the role of the Anti-Aircraft artillery. Although the Anti-Aircraft continued to protect its ground forces no great part was played by it in driving the Axis forces out of Africa.

### **Italy**

In preparation for the Italian campaign 43 Light Anti-Aircraft Regiment began assembling in Pietermaritzburg on 8 July 1943. The unit was organised in the following sub-units:

- a. 127 Light Anti-Aircraft Battery consisting of personnel from the South African Ar-





Camouflaged 3,7-inch position in North Africa prepared for action.

- tillery.
- b. 128 Light Anti-Aircraft Battery consisting of personnel from the South African Air Force.
  - c. 129 Light Anti-Aircraft Battery consisting of personnel from 3 Reconnaissance Battalion and South African Armour Corps' Battle School.
  - d. Regimental Headquarters.

The main body of the unit arrived at Helwan at the end of September 1942. A month later the whole unit moved to the Royal Artillery base at Almaza where they spent a fourteen day period on battery training.

The name of the unit was changed to 43 Light Anti-Aircraft Regiment, South African Air Force in the end of 1943. The other Anti-Aircraft units in existence at that period were 42 and 44 Light Anti-Aircraft Regiments and 1/12 Light Anti-Aircraft Regiment. Up to this stage these regiments were used as a reinforcement pool for AA sub-units intended to form part of 6 South African Armoured Division. Since 43 Light Anti-Aircraft Regiment, and soon the rest, came increasingly under control of the

South African Air Force, it was decided that these units should cease to be a reinforcement pool for Divisional units. The South African Air Force would only maintain 1/12 Light Anti-Aircraft Regiment and the South African Air Force portion of the NMR/SAAF Regiment.

It was also decided to convert 42 and 43 Light Anti-Aircraft Regiments into General Service units and all personnel who only signed the Africa Service Oath were returned to South African Air Force Depot. By April 1944 it was also decided that all South African Artillery members of South African Air Force Army units must become South African Air Force personnel. This move brought 43 Light Anti-Aircraft up to full war establishment, but left no General Service troops in reserve.

In the middle of August 1944 43 Light Anti-Aircraft Regiment left for Italy, leaving 42 Light Anti-Aircraft Regiment for operational duties at the Suez Canal. The history of 43 Light Anti-Aircraft Regiment as an Anti-Aircraft unit ended upon arrival in Italy, since it was converted into a motorised battalion.

At the beginning of 1945 it was found that the infiltration of South African Air Force personnel into numerous Divisional units complicated administration at all levels. These personnel were employed in a completely army roll. On 8 February 1945 43 Anti-Aircraft Regimental personnel were all transferred to the Army.

The history of 44 Light Anti-Aircraft Regiment followed similar lines when it became 44 Infantry Battalion in August 1944.

### **The end of the war**

With the danger of an air attack on the Union becoming more remote the disbandment of

anti-aircraft sites was considered. The development of South African ports had now reached such an extent that it became very difficult to defend them against air attacks.

By February 1945 it was pointed out by the Director Anti-Aircraft that the general tendency, in the case of coastal ports, was for dual purpose guns. The Chief of the General Staff acted on this advice and Anti-Aircraft Artillery was once again moved under the wings of the Coast Defence Branches of Artillery.

By 7 May 1945 all Anti-Aircraft personnel were posted to 43 Infantry Battalion South African Air Force and the Anti-Aircraft organisation was once more in the hands of the Army.