

Tactical Structure in World War II

Italy

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Corps Artillery

Under the organization plan in force on Italy's entrance into the war each corps, except the Alpine Corps, was to include a supporting artillery regiment (*raggruppamento di artiglieria di corpo d'armata*) that could supplement the fires of the subordinate divisions. The composition of the regiments varied according to the type of corps as follows:

normal corps: 3 battalions of 105/28 guns, 2 or 3 battalions of 149/13 howitzers
celere corps: 3 battalions of 105/28
autotransportable corps: 3 battalions of 105/28
armored corps: 3 battalions of 105/28
corps in Libya: 2 battalions of 105/28, 1 battalion of 100/17

The 105/28 field gun and 149/13 howitzer were obsolete weapons dating from before the first world war. They were to have been replaced by newer 105/40 and 149/19 weapons designed during the 1930s, but funding delays prevented significant implementation of this plan. By 1939 the army still held 945 105/28 field guns and 490 149/13 howitzers in its inventory, but none of the newer weapons. Instead, they were supplemented on mobilization by large numbers of equally obsolete non-standard weapons. As an interim measure, a number of ex-Austrian 104/32 field guns were rebored to 105mm caliber, to yield the 105/32, a weapon with a range of 16,200 m (compared to 12,780 for the 105/28) but at a cost of increased weight that made them unpopular. Some 238 of these were in service in 1939. Another older weapon was the 149/12, a Krupp design license-built in Italy during WW I. With an effective range of only 6,900 m (even less than the completely inadequate 8,790 m of the 149/13) a total of 696 were in the army inventory in 1939, but only 160 were in active service, the rest being held in depots. Thus the Italian corps artillery assets were largely using obsolete equivalents of weapons that most other armies were using for divisional support.¹

¹The non-divisional artillery support units were designated using Roman numerals by blocks within three separate groups. Within the corps-type units 105/28 battalions were designated 1-50 (I-L), 105/32 battalions 51-100 (LI-C), and 149/13 battalions above 100 (+C). Army-level units were allocated a parallel series, with 149/35 battalions number 1-50 (I-L), and 152/13 battalions above 50 (+LI). Heavier artillery had its own, third, series. It was thus critical to identify any artillery by its weapon as well as its numerical designation, for instance, the *XXIII Gruppo di batterie da 105/28*, lest it be confused with a similarly-numbered unit in another series, such as the *XXIII Gruppo di batterie da 149/35*. As new weapons were introduced into the inventory this grew a bit more complicated, with the 149/28 and 149/40 weapons using the block allocated to the 149/35, and the 152/37 (brought out of retirement) using the 152/13 block. The 210/22 howitzer battalions appear to have been randomly numbered. Non-divisional field artillery may have had its own numbering series, as 100/22 Skoda battalions were numbered in the 250-series. This distinguished them from divisional artillery regiments, which used internal numbering, ie, the I and II 75-27 Battalions and the III 75-13 Battalion of the 36th Artillery Regiment of the Forlì mountain-type division.

	Officers	Enlisted	Medium MGs	Artillery Pieces	Bicycles	Motorcycles	Cars	Light Trucks	Cargo Trucks	Tractors	Special Trucks
Corps Artillery Regiment											
Regiment Headquarters	13	130	0	0	12	3	3	2	8	0	3
Each 105/28 Gun Battalion											
Battalion Headquarters	6	65	0	0	6	2	1	2	4	0	0
Three Batteries, each	4	125	2	4	6	1	1	1	4	9	0
Combat Trains	3	90	0	0	2	1	0	0	5	0	9
Each 149/13 Howitzer Battalion											
Battalion Headquarters	6	65	0	0	6	2	1	2	4	0	0
Three Batteries, each	4	130	2	4	6	1	1	1	4	9	0
Combat Trains	3	115	0	0	2	1	0	0	5	0	15
Army Artillery Regiment											
Regiment Headquarters	19	105	0	0	12	3	3	0	9	0	3
Each 152/13 Howitzer Battalion											
Battalion Headquarters	6	60	0	0	6	1	1	0	6	0	0
Three Batteries, each	4	120	2	4	6	0	1	4	0	4	3
Combat Trains	3	100	0	0	2	1	0	0	5	0	15
Each 149/35 Gun Battalion											
Battalion Headquarters	6	60	0	0	6	1	1	0	6	0	0
Three Batteries, each	4	130	2	4	6	0	1	4	0	4	7
Combat Trains	3	100	0	0	3	1	0	0	5	0	15
Each 152/37 Gun Battalion											
Battalion Headquarters	6	60	0	0	6	1	1	0	6	0	0
Three Batteries, each	4	145	2	4	6	0	1	4	0	4	7
Combat Trains	3	100	0	0	3	1	0	0	5	0	15
Each 152/45 Gun Battalion											
Battalion Headquarters	8	70	0	0	7	1	1	0	4	0	1
Three Batteries, each	5	125	2	4	6	0	1	4	0	0	1
Each 210/8 Howitzer Battalion											
Battalion Headquarters	7	65	0	0	7	1	1	0	4	0	1
Three Batteries, each	4	160	2	4	6	0	1	0	4	0	1
Each 260/9 Howitzer Battalion											
Battalion Headquarters	8	70	0	0	7	1	1	0	4	0	1
Three Batteries, each	5	170	2	4	6	0	1	0	4	0	1
Each 305/8, /10 or /17 Howitzer Battalion											
Battalion Headquarters	8	70	0	0	7	1	1	0	4	0	1
Three Batteries, each	5	115	2	2	6	0	1	0	4	0	1
Regimental Tractor Park											
Park Headquarters	11	240	0	0	2	2	3	0	2	0	5
Each Tractor Group											
Group HQ	2	16	0	0	4	0	1	0	1	0	0
Each Tractor Company	4	80	0	0	4	0	1	0	2	30	2

Non Divisional Artillery, from 1938

The pre-war 1938 organization tables envisioned a standard corps artillery regiment consisting of three battalions of 105/28 guns and three of 149/13

howitzers. The battalions were similar, with each battery having nine tractors, four to haul the guns, four for ammunition trailers, and one spare, these being the Pavesi 4x4 models, slow but rugged. The main difference was in the combat trains, where were found the special heavy ammunition

	Officers	NCOs	Other Ranks	Medium Machine Guns	Artillery Pieces	Motorcycles	Field Cars	Light Trucks	Medium Trucks	Heavy Trucks	Tractors	Bicycles
Corps Artillery Regiment, 1940-43												
Regiment Headquarters	12	0	0	0	0	0	0	0	0	0	0	0
Headquarters Battery												
Command Platoon												
Command Group	1	1	35	0	0	3	2	9	0	0	0	0
Signal Group												
Wire Section	0	1	30	0	0	0	0	0	0	0	0	10
Radio Section	0	1	32	0	0	0	0	0	0	0	0	0
FDC/Survey Group	0	3	15	0	0	0	0	0	0	0	0	0
Trains Platoon	1	4	23	0	0	0	1	1	0	2	0	2
Each Battalion (105/28, 105/32, 149/12 & 149/13)												
Battalion Headquarters												
Command Group	6	1	3	0	0	0	0	0	0	0	0	0
FDC/Survey Section	0	1	9	0	0	0	0	0	0	0	0	0
Signal Section	0	2	35	0	0	0	0	4	0	0	0	6
trains elements	0	1	20	0	0	2	1	2	0	0	0	0
Three Batteries, each												
Battery Headquarters	1	2	38	0	0	1	1	4	0	0	0	4
Firing Battery	3	2	66	2	4	0	0	0	0	0	6	1
trains elements	0	1	15	0	0	0	0	1	0	3	0	1
Service Battery												
Battery HQ (105/28 & 149/12)	3	2	28	0	0	1	0	2	0	4	0	2
or Battery HQ (105/32 & 149/13)	3	2	31	0	0	1	0	2	0	7	0	2
Three Sections (105/28 & 105/32), each	0	1	16	0	0	0	0	1	0	2	0	0
or Three Sections (149/12 & 149/13), each	0	1	25	0	0	0	0	1	0	6	0	0
Corps Artillery Regiment, North Africa, from May 1940												
Regiment Headquarters												
Command Group	9	0	0	0	0	0	0	0	0	0	0	0
HQ Platoon	1	6	64	0	0	3	2	6	0	0	0	4
Trains Section	1	2	13	0	0	0	0	1	0	1	0	1
Two 105/28 Gun Battalions, each												
Battalion Headquarters												
Command Group	6	0	0	0	0	0	0	0	0	0	0	0
HQ Platoon	1	5	51	0	0	3	1	4	0	0	0	2
Trains Section	0	3	14	0	0	0	0	2	0	2	0	1
Three 105/28 Gun Batteries, each												
Battery Headquarters	1	2	25	0	0	2	1	2	0	0	0	2
Firing Battery	3	2	65	2	4	0	0	0	0	2	6	1
trains elements	0	1	6	0	0	0	0	0	0	1	0	1
One or Two 100/17 Howitzer or 75/27 Gun Battalions, each*												
Battalion Headquarters												
Command Group	6	0	0	0	0	0	0	0	0	0	0	0
HQ Platoon	1	4	47	0	0	3	1	4	0	0	0	2
Trains Section	0	3	14	0	0	0	0	2	0	2	0	1
Three Batteries, each												
Battery Headquarters	1	2	25	0	0	2	1	2	0	0	0	2
Firing Battery	3	2	56	2	4	0	0	0	0	1	6	1
trains elements	0	1	6	0	0	0	0	0	0	1	0	1
Service Battery												
Battery Headquarters	1	1	13	0	0	1	0	1	0	2	0	0
Two 105/28 Battalion Sections, each	1	2	27	0	0	1	0	1	0	3	0	1
One 100/17 Battalion Section*	1	2	19	0	0	1	0	1	0	2	0	1
Two 75/27 Battalion Sections, each*	1	2	15	0	0	1	0	1	0	1	0	1

* a regiment consisted of two 105/28 gun battalions and either one 100/17 howitzer battalion or two 75/27 gun battalions with their associated service sections.

Corps Artillery

trucks, each towing a trailer. Thus, at the battery level, the 105mm units carried more ammunition, 124 rounds per gun as compared to only 48 of the heavier 149mm ammunition, but both types of battalions carried 100 rounds per gun in the combat trains.

A battery included a five-man fire direction plotting team and thirteen wire and five radio signal men. This permitted the assignment of an RF-2 transceiver team to both the observation section and to the gun position, along with telephone line communications and 80mm optical telegraphs where their use was possible.



An elderly 149/13 howitzer being towed by old Pavesi tractor in pre-war maneuvers. By the time war broke out the dolly wheel supporting the trails had usually been replaced by a trailer that carried the gun, permitting slightly higher speeds.

The battalion HQ's signal platoon held four more RF-2s, sufficient to provide one for each battery for the battalion net, along with wire and optical signallers. The HQ also included a four-man topographic team and a 6-man plotting and observation team.

With the mobilization of 1940 weapons had to be drawn out of storage, and even then they were spread more thinly. As a result, the new TO&Es provided no fewer than seven variants of the corps artillery regiment, depending on the availability of weapons. The variants specified were:

- Type A: one battalion 105/28, one battalion 149/13
- Type B: two battalions 105/28, one battalion 149/13
- Type C: one battalion 105/28, two battalions 149/13
- Type D: two battalions 105/28, two battalions 149/13
- Type E: three battalions 105/28, two battalions 149/13
- Type F: two battalions 105/28, three battalions 149/13
- Type G: three battalions 105/28, three battalions 149/13

The battalion of a corps artillery regiment was conventional in structure, consisting of a headquarters, three line batteries, and a service battery.

The battalion HQ and line battery organization was now constant regardless of which of the four specified weapons (105/28, 105/32, 149/12 or 149/13) was in use. The firing battery of each battery was provided with four Model 26 or Model 30 artillery tractors to tow the weapons, along with two more each towing an ammunition trailer, while the battery trains provided two heavy trucks for ammunition, one for baggage and a light truck for rations. The battery HQ was provided with four light trucks, one for the FDC/survey section, one for command purposes, and two for the signal section.

The vital communications assets remained unchanged, two RF2 transceivers and 20 km of telephone wire in each battery to talk between the forward CP and the gun position, and an RA1 receiver and four RF2s, along with 30 km of wire to establish the net between the battalion HQ and the batteries.

The battalion service battery consisted of a headquarters and one section for each line battery in the battalion. The battery HQ provided a heavy truck for baggage, one for parts and tools for the 6-man maintenance team, two for fuel and water, and (in 105/32 and 149/13 battalions only) three more for special equipment for use in towing the weapons in rough terrain². Each section was provided with a light truck for rations and two (in 105mm battalions) or six (in 149mm battalions) heavy trucks for ammunition.

In keeping with the Italian philosophy of reducing to the absolute minimum the logistics burden in the desert, personnel and equipment were pared from a corps

	Battalions								Total
	75/27 Gun	100/17 Howitzer	100/22 Howitzer	105/28 Gun	105/32 Gun	149/13 Howitzer	149/19 Howitzer	149/35 Gun	
Invasion of Greece									
9th Army, December 1940									
III Corps	0	0	0	0	0	2	0	0	2
XXVI Corps	0	0	0	0	0	0	0	0	0
11th Army, March 1941									
IV Corps	0	0	0	0	0	0	0	0	0
VIII Corps	0	0	0	3	0	1	0	0	4
XXV Corps	0	0	0	1	0	1	0	0	2
Invasion of Yugoslavia, 1941									
2nd Army									
V Corps	0	0	0?	?	?		0	0	4
VI Corps	0	0	0?	?	?		0	0	4
XI Corps	0	0	0?	?	?		0	0	5
Autotransportable Corps	0	0	0	3	0	0	0	0	3
Celere Corps	?	?	?	?	?	?	?	?	?
9th Army									
VIII Corps	0	0	0	1	0	3	0	0	4
XIV Corps	0	0	0	0	0	0	0	0	0
XVII Corps	0	0	0	0	0	0	0	0	0
North Africa, May 1941									
X Corps	0	1	0	2	0	0	0	0	3
XX Corps	0	0	0	0	0	0	0	0	0
Eastern Front, August 1941									
CSIR	0	0	0	0	3	0	0	0	3
Eastern Front, 1942									
II Corps	0	0	0	2	0	2	0	0	4
XXXV Corps	0	0	0	0	3	1	0	0	4
Alpine Corps	0	0	0	0	3	1	0	0	4
Army Group South, October 1942									
5th Army									
III Corps	1	1	0	4	0	1	0	0	7
XVII Corps	0	0	0	0	0	0	0	0	0
6th Army									
XII Corps	0	0	0	3	0	2	0	0	5
XVI Corps	0	0	0	0	3	0	0	0	3
7th Army									
IX Corps	0	0	1	0	0	0	0	0	1
XXXI Corps	0	0	2	0	0	0	0	1	3
6th Army (Sicily), February 1943									
XII Corps	1	0	0	3	0	2	0	0	6
XVI Corps	0	0	0	3	0	0	0	0	3
Coastal Corps	0	0	0	0	0	0	0	0	0

Examples of Corps Artillery Assets 1940-43

²The 105/32 and 149/13 could be broken down into four loads for movement over mountainous terrain.

artillery regiment deploying to Libya under special TO&Es issued in May 1940. A corps artillery regiment in that theater was specified as consisting of two battalions of 105/28 guns and either (a) one battalion of 100/17-14 TM field howitzers, or (b) two battalions of 75/27-06 TM field guns.



A 105/32 corps field gun in Tunisia 1943

The 105/28 gun battalion was reduced in strength from 546 all ranks in the normal corps regiment to 426 (including its dedicated service section) in the Libya-type regiment. The vehicle fleet was also reduced substantially, in particular the number of light trucks, which fell from 27 in the regular 105/28 battalion to 12 in the Libya-type battalion. Ammunition carriage was reduced

slightly. At the battery level it stayed the same, two tractors towing ammunition trailers in the firing battery and two heavy trucks (in the firing battery in the Libya-type battery and the battery trains in the normal battery). The losses came at higher levels, where the service battery (with six heavy ammunition trucks and three light rations trucks) normally found in each battalion was replaced by a smaller section (with three heavy ammunition trucks with trailers and one light rations truck) held at the regimental level.

It seems likely that more severe problems were caused by the reduction in the number of light trucks, for the battery HQ, which formerly had four light trucks (one for FDC, one for command, and two for signals) was reduced to two (one for command and one for the observation party). This impacted severely communications, for the number of radio personnel assigned dropped from 31 in the normal regiment HQ to 17 in the Libya-type, from 16 in the normal battalion HQ to 8 in the Libya-type, and from 4 in the normal battery HQ to none in the Libya-type. Given the normal ratio of two men per radio, the resulting damage to flexibility can be easily seen. The rationale for so severely reducing the efficiency of the signal net in units

deployed to Libya is unclear.

None of the more modern weapons made it to North Africa. The actual composition of the 21st and 23rd corps artillery regiments in Libya in late 1940 is unknown, but the 10th Regiment (of X Corps) had 105/28s and 100/17s, as did the 22nd Regiment, while the 20th Regiment had 105/28s and 75/27s. One corps-type artillery regiment was shipped over in early 1941, the Celere Corps' 16th Regiment, with three battalions (XV, XLIV, and XLIX) of 105/28 guns. For the defense of the Mareth Line the two corps artillery regiments (16th and 24th) each had only two battalions of 105/28 field guns.

The CSIR (autotransportable corps) departed for the eastern front in August 1941 with the 30th Corps Artillery Regiment, composed of the LX, LXI, and LXII battalions of 105/32 guns, supplemented by two battalions of 75mm AA. With the reorganization into the 8th Army the corps artillery component was strengthened into the II Corps Regiment (2 battalions of 105/28 and 3 of 149/13), the XXX Corps (CSIR) Regiment still with three 105/32 battalions, but reinforced with a 149/13 battalion), and the 11th Corps Artillery Regiment (3 battalions of 105/32 and 1 of 149/13) attached to the Alpine Corps. All were destroyed before new weapons came available.

The threatened islands of the Mediterranean fared as well as could be expected. On Sicily the 12th Corps Artillery Regiment had the XXI, XXII, and XLVIII battalions of 105/28, and the CXXI and CXXII battalions of 149/13; while the XVI Corps' anomalously-numbered 40th Regiment held the X, XVI and XXIX battalions of 105/28, and the CIX and CX battalions of 149/13s. These were reinforced by the CLI and CLVI battalions of new 149/19 howitzers shortly before the invasion. The VII Corps on occupied Corsica had the 7th Regiment with 2 battalions of 105/28 and 2 of 149/13. The XIII Corps on Sardinia had 1 battalion of 75/27 guns and 3 of 105/28, supplemented in mid-1943 by the CLXI and CLXII battalions of new 149/19s.

At the end of July 1943 two battalions of the 15th Corps Artillery Regiment were ordered reorganized and redesignated into the CLXXIV and CLXXVI 149/19 battalions, and one battalion of the 5th Corps Artillery Regiment into the CLXXV 149/19 battalion, but it seems highly unlikely that much

was accomplished before the chaos of the surrender.

If the forces in combat were not well provided for, those in less active theaters fared worse. Of the five corps on occupation duty in Yugoslavia, two had no corps artillery regiments at all. By mid-1943 the occupation corps in Greece had been reduced to a single battalion (VIII) of 105/28 in the III corps, one of 105/28 (XIII), and one of 149/13 (CXIII) in the VIII Corps and none at all in the XXVI Corps.

Army & GHQ Artillery

Each field army was also to have an artillery regiment. Theoretically, each of these was to consist of four battalions of 149/40 field guns and another four battalions of 210/22 howitzers, both modern weapons designed during the planned artillery rejuvenation of the 1930s. However, only seven of the 149mm guns and eight of 210mm howitzers had entered service by 1939. Production did not significantly increase in pace and although 590 149mm and 280 210mm weapons had been ordered by March of 1940, only 108 and 34 weapons, respectively, had been delivered by the war's end.

Instead, the army artillery units had to make do with obsolete weapons. The field army artillery regiments were equipped with a mixture of the 149/35 gun, an archaic pre-WW I weapon with neither recoil mechanism nor on-carriage traverse and a range of 16,500 m (358 in active service and 519 in depots in 1939); and a few 152/13 howitzer (the British 6" howitzer held over from grant aid during the prior war, 88 held in depots), and the 152/37 gun (range of 22,000 m, 29 held in depots). To supplement these weapons the Germans provided a small number of their 15cm sFH.18, which the Italians redesignated as the 149/28.

The army artillery regiments were designed for rather sedentary siege duties, for their communications were abysmal. Under the 1938 organization tables the batteries had no radios and the battalion HQ only four R-3 sets for the battalion net. Communications between the observers and the batteries were by telephone. Things got even worse with the 1940 TO&Es. The batteries still had no radio operators, the battalion HQs now had only three men each manning a single R-1, and the regiment HQ six with two R-4As, primarily used for monitoring aircraft frequencies. For normal communications the regiment relied on telephone detachments, 31 men in the regiment HQ, 27 in the battalion HQ, and 23 in each battery.

The 1938 organization envisioned a wide variety of possible weapons in the army artillery regiment, all the way up to the massive, if relatively immobile, 305mm short-barrel howitzers. By 1940, however, the super-heavy artillery, such as those 305mm howitzers, were split off into separate static artillery battalions.

The separate heavy artillery units, those with 152mm guns and howitzers

210mm and larger, had only administrative transport. To move they would have to borrow from the GHQ tractor park, which included a variable number of tractor companies, each with three platoons each of ten tractors.

	Officers	NCOs	Other Ranks	Medium Machine Guns	Artillery Pieces	Motorcycles	Field Cars	Light Trucks	Medium Trucks	Heavy Trucks	Tractors	Bicycles
Army Artillery Regiment (from July 1942)												
Regiment Headquarters	12	0	0	0	0	0	0	0	0	0	0	0
Headquarters Battery												
Command Platoon												
Command Group	1	1	34	0	0	3	2	8	0	0	0	0
Signal Group												
Wire Section	0	1	30	0	0	0	0	0	0	0	0	10
Radio Section	0	0	8	0	0	0	0	0	0	0	0	0
FDC/Survey Group	0	3	14	0	0	0	0	0	0	0	0	0
Trains Platoon	1	5	25	0	0	0	1	1	0	3	0	2
Each Battalion (149/35 & 152/13)												
Battalion Headquarters												
Command Group	6	1	3	0	0	0	0	0	0	0	0	0
FDC/Survey Section	0	1	9	0	0	0	0	0	0	0	0	0
Signal Section	0	1	29	0	0	0	0	1	0	0	0	6
trains elements	0	0	16	0	0	1	1	6	0	0	0	0
Three Batteries (149/35), each												
Battery Headquarters	1	2	36	0	0	0	1	3	0	0	0	4
Firing Battery	3	2	75	2	4	0	0	0	0	0	6	1
trains elements	0	1	15	0	0	0	0	1	0	1	0	1
or Three Batteries (152/13), each												
Battery Headquarters	1	2	36	0	0	0	1	3	0	0	0	4
Firing Battery	3	2	68	2	4	0	0	0	0	0	6	1
trains elements	0	1	13	0	0	0	0	1	0	1	0	1
Service Battery												
Battery Headquarters	3	3	29	0	0	1	0	2	0	4	0	2
Three Sections, each	0	1	20	0	0	0	0	1	0	0	2	0
Army Artillery Regiment, North Africa (from May 1940)												
Regiment Headquarters												
Command Group	9	0	0	0	0	0	0	0	0	0	0	0
HQ Platoon	1	5	66	0	0	3	2	6	0	0	0	19
Trains Section	1	2	22	0	0	0	0	2	0	1	0	2
Four 149/35 Gun Battalions, each												
Battalion Headquarters	6	3	55	0	0	1	1	4	9	9	9	6
Three 149/35 Gun Batteries, each												
Battery Headquarters												
HQ Section	1	0	8	0	0	0	1	1	0	0	0	0
FDC Section	0	1	4	0	0	0	0	0	0	0	0	2
Signal Section	0	1	22	0	0	0	0	2	0	0	0	2
Firing Battery	3	2	64	2	4	0	0	0	0	3	4	1
Trains	0	1	12	0	0	0	0	1	0	1	0	1
Service Battery												
Battery Headquarters	3	3	26	0	0	1	0	1	0	2	0	2
Three Service Sections, each	0	1	19	0	0	0	0	1	0	1	1	0
Army Artillery Regiments												

The 1940 organization table added tractors to the firing batteries, although the chronic shortage of heavy tractors probably made this often academic.

As with the corps artillery regiment special TO&Es for units deployed to North Africa were issued in May 1940. Unlike the corps regiment, however, these made few substantive changes to the organization, reducing army-support battalion strength by only 11 personnel from the original figure of 557. In terms of regimental structure, the significant change was to composition, with the regiment being redefined as consisting of four battalions of 149/35 guns. The pre-war mobilization plans called for such a regiment to be assigned to the 5th Army on the Tunisian border (but not to the 10th Army facing Egypt), but no such unit had been sent to North Africa by the start of hostilities.

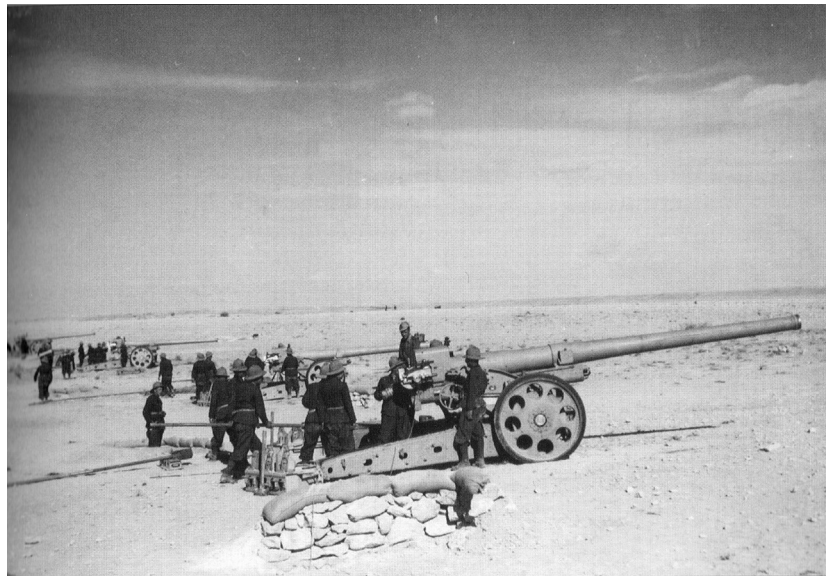
Separate units were also formed to man such modern weapons as became available. There were two such heavy field howitzers, the OTO 149/19 and the German 149/28 (sFH 18). The Italian weapon was a good one, but series production did not get underway until 1941, and then at a low rate. Even more critical was a shortage of the TM40 artillery tractors that were to haul these guns, and as a result most were pulled by underpowered and worn Pavesi tractors. Each 149/19 battery was to hold 6 tractors, four for the guns and two for ammunition trailers and these latter, together with 4 trucks in the trains carried 480 rounds of ammunition. For communications, each battery had a single RA2 radio for the battalion net and an 8-man wire team with a truck for communication between the forward CP and the gun position. The battalion HQ had one more radio and a 15-man wire section.

Plans to provide modest numbers of the more modern weapons were finally made in early 1943, but by this time shipping them to North Africa was out of the question and instead, they were ordered diverted to the defense of Sicily and Sardinia in May 1943. Under this order, 6th Army in Sicily received the CLI and CLVII Battalions of 149/19, as well as the LV Battalion of 105/32, the CCCLXI Battalion of 149/13, and the Centauro Division's III Battalion of 105/28. Sardinia received the CLX Battalion of 149/19 and the LVI Battalion of 105/32. Two further battalions of 149/19 (CLXIX and CLXX) were ordered activated in May 1943 for mainland defense, while the CLV Battalion served in occupied France. These units were often, but not always, subordinated to corps artillery regiments on arrival.

Italy also purchased 38 sFH 18 (149/28) howitzers from Germany. Their organization differed from that of the 149/19s only in that an additional tractor was provided in each firing battery and heavy trucks replaced medium trucks in the battery trains. The XXIV and L battalions were sent to the eastern front, while the CXXXI and CXLVII battalions, sharing the remaining 14 guns, went to North Africa.

Before the start of the Italian offensive into Egypt SMRE did dispatch the 25th Artillery Regiment with four battalions of 149/13 howitzers (CV, CXXX, XCLVIII, and CL) to Libya for additional heavy fire support, but these were lost in Tobruk in the initial British counter-offensive. Few more modern heavy artillery pieces were shipped to North Africa.

For the El Alamein battle the army's 8th Artillery Regiment disposed of only one battalion (XXXIII) of modern 149/40 guns, one (CXXXI) of German-supplied 149/28, and one (LII) of 152/37. The latter two were lost in the subsequent retreat and for the defense of the Mareth line were replaced by two battalions of elderly 149/35 guns.



Just a few of the modern 149/40 heavy guns were deployed to North Africa, as seen here.

Italy held 30 ex-Czech 152/37 heavy guns in four battalions (LI to LIV), nominally each of three 4-gun batteries, although actually they held only two batteries. The constituent units were similar to those of the 149/35 battalions, except that the guns required two tractors apiece, being drawn in two loads. Photographs indicate that the one battalion sent to North Africa, the LI, carried their guns in one load on the beds of heavy trucks.

	Officers	NCOs	Other Ranks	Medium Machine Guns	Artillery Pieces	Motorcycles	Field Cars	Light Trucks	Medium Trucks	Heavy Trucks	Tractors	Bicycles
Artillery Battalion (149/28 & 149/19) (from June 1942)												
Battalion Headquarters												
Command Group	6	1	3	0	0	0	0	0	0	0	0	0
FDC/Survey Section	0	1	9	0	0	0	0	0	0	0	0	0
Signal Section	0	2	34	0	0	0	0	0	0	0	0	6
trains elements	0	1	18	0	0	1	1	6	0	0	0	0
Three Batteries (149/19), each												
Battery Headquarters	1	1	31	0	0	1	1	2	0	0	0	4
Firing Battery	3	1	57	2	4	0	0	0	0	0	6	1
trains elements	0	1	15	0	0	0	0	1	5	0	0	1
or Three Batteries (149/28), each												
Battery Headquarters	1	2	37	0	0	1	1	3	0	0	0	4
Firing Battery	3	2	66	2	4	0	0	0	0	0	7	1
trains elements	0	1	7	0	0	0	0	1	0	3	0	1
Service Battery												
Battery Headquarters	3	2	28	0	0	1	0	2	0	4	0	2
Three Sections, each	0	1	25	0	0	0	0	1	0	6	0	0
Artillery Battalion (149/40 & 210/22) (from July 1941)												
Battalion Headquarters												
Command Group	6	1	3	0	0	0	0	0	0	0	0	0
FDC/Survey Section	0	1	9	0	0	0	0	0	0	0	0	0
Signal Section	0	1	29	0	0	0	0	1	0	0	0	6
trains elements	0	0	17	0	0	2	1	6	0	0	0	0
Three Batteries, each												
Battery Headquarters	1	2	37	0	0	1	1	3	0	0	0	4
Firing Battery	3	3	74	2	4	0	0	0	0	2	9	1
trains elements	0	1	13	0	0	0	0	1	0	1	0	1
Service Battery												
Battery Headquarters	4	3	37	0	0	2	0	2	0	5	0	2
Three Sections (149/40), each	0	1	20	0	0	0	0	1	0	2	0	0
or Three Sections (210/22), each	0	1	23	0	0	0	0	1	0	3	0	0

GHQ Heavy Artillery Units

Large numbers of these, and other, weapons were used in the invasion of Yugoslavia in 1941. The 2nd Army (invading from Italy) disposed of no fewer than six army artillery regiments, with a total of one battalion of 149/28, fourteen of 149/35, one of 149/50, six of 152/13, one of 152/37, one of 210/22, and one of 305/17. Apparently some lessons had been learned from the disastrous invasion of Greece in 1940, when almost no army artillery had been allocated. For operations on the eastern front the 8th Army, activated in 1942, was assigned the 9th Army Artillery Regiment

with two battalions (XXIV and L) of 149/28, three (XXXI, XXXII, and XXXIV) of 149/40, and one (LXXIII) of 210/22. Although not numerous, this did represent a large proportion of the modern heavy artillery park.

There were precious few of the modern weapons to go around. By February 1943 the 6th Army Artillery Regiment on Sicily still had five battalions, but all were equipped with 149/35 museum pieces (Battalions V, XVIII, XXV, XXVI, and XXVII). The replacement weapon, the 149/40, saw the initial order for 48 completed by 1940, but its tractors were not, so they could not be fielded. In fact, the official organization tables were not published until July 1941 and the battalions activated in December. In the end, only four battalions were formed, the three mentioned above with the 8th Army on the eastern front and the other (XXXIII) serving first in Yugoslavia, and then in North Africa.

Production of the 210/22 howitzer, a capable weapon, was even more anemic. Only 16 had been built by Italy's entrance into the war, followed slowly by 36 more. Only one battalion, the LXXIII, was so equipped. It went to the eastern front in 1942 where it was incorporated into the 9th Army Artillery Regiment. In August 1942, however, the regiment was reorganized into three battalions (XXXI, XXXIV, and LXXIII) each with two batteries of 149/40 guns and one of 210/22 howitzers, making it the only truly modern heavy artillery regiment in the Italian Army, until it was destroyed in December. One additional battalion, the LXXIV, was raised but saw no action. The rest of the howitzers built sat unused for lack of tractors.

As with corps artillery, the forces in less active theaters did not fare well either. The 11th Army occupying Greece was supported by units equipped almost exclusively with captured weapons. These comprised the XCIII Battalion (75mm ex-Dutch guns), the XCVI and XCVIII Battalions (105mm ex-French guns), the CLXXXVIII Battalion (105mm guns of unknown manufacture), the CLXXXVI and CLXXXVII Battalions (155mm ex-French howitzers) and fourteen independent batteries with weapons that included 105mm Polish and Greek guns, British 25pdrs, Soviet 122mm and 152mm howitzers and others. This expansion with war booty, presumably via their German allies, had apparently not been foreseen in the mobilization plans, for no motor vehicles were available to equip these units. They were, instead, provided with draft horses and probably led rather sedentary lives until the armistice.

Artillery Observation Units

To help maximize the efficiency of the heavy artillery each corps was authorized a target acquisition unit (*reparto specialisti di artiglieria di corpo d'armata*). Under the June 1939 TO&E such a unit consisted of a HQ, an intelligence section, a 117-man

observer and flash-ranging section, an 86-man sound-ranging section, a topographic section, and a meteorological section. The observer and flash ranging section was built around three observation squads, each of an officer, six

enlisted observer personnel, ten enlisted signal personnel, and drivers for two light trucks and a motorcycle. The sound-ranging section formed a central analysis group, a forward command group, and four listening posts with Model 35 sound-ranging units, each with a light truck. For communications, the sound-ranging section had six RF.2 radios, the observer/flash section four, and the unit HQ two, along with ten telephones in the sound-ranging section and eleven in the observer section. Army artillery components also usually included a fire control battery, probably with a similar organization.

In July 1942 a new TO&E for the target acquisition unit was issued that enlarged the topographic unit to 23 men and added FDC responsibilities, presumably to help coordinate fire planning. Unit organization was otherwise unchanged.

	Officers	NCOs	Other Ranks	Motorcycles	Cars	Light Trucks
Unit Headquarters	2	3	19	1	1	2
Information Section	1	1	9	1	0	1
Observation & Flash Ranging Section						
Section HQ	2	3	49	2	1	3
Three Flash Squads, each	1	0	20	1	0	2
Sound Ranging Section	2	4	80	2	0	7
Topographic Section	2	2	11	0	0	2
Meteorology Section	1	1	7	0	0	1
from July 1942:						
Topographic Section	2	2	19	0	0	2

Observation Unit, 1939-43

Anti-Aircraft Artillery

Similarly obsolete were the anti-aircraft artillery units. Responsibility for homeland gun air defense had been granted to the MVSN in 1927, which formed the Territorial Militia for Internal Anti-Aircraft Defense (*Milizia per la Difesa Interna Controaerei Territoriale* or *M.DICAT*). The bulk of the anti-aircraft weapons were found here, but the army also maintained its own anti-aircraft units for defense of field units, while the navy had a smaller number of batteries for the defense of its ports and bases.

The majority of the weapons were obsolete. Two of the more common weapons were the 75/27 and the 77/28, both obsolete World War I field guns placed on static mounts and next to useless against modern aircraft. Only slightly better was the 76/40, an equally aging weapon derived from the British 12pdr/3" gun. Attempts had been made to modernize this latter weapon with a slightly longer barrel, resulting in the 76/45, but this too fell short of the performance needed by 1939/40. Similarly obsolete was the 102/35, a heavy gun used by DICAT in small numbers. Close-in anti-aircraft defense was entrusted to about 4,000 WW I-vintage 8mm St. Etienne machine guns.

The obsolescence of this force was not lost on the authorities and in the mid-1930s an effort was made to develop a new series of weapons. The new light AA weapon was a 20mm gun developed and produced by Breda as the 20/65 Model 35. Although somewhat complex, this weapon appears to have performed fairly well and was produced in substantial quantities, although never enough to satisfy demand. In an attempt to meet shortages orders for about 200 of a competing design, the 20/77, a weapon designed by Scotti and produced by Oerlikon and Isotti-Fraschini, were placed in 1941. The new medium AA gun was to be the 37/54, a static weapon designed for use by DICAT units. The new 75mm weapon had entered development earlier than the rest, in 1926, and was adopted in 1934 as the 75/46. The army had first call on this weapon, having funded its development, and the static mount for DICAT was not standardized until 1940. The 75/46 had adequate performance, but production was slow so by the end of 1942 only 226 had been delivered. The heaviest new gun was the 90/53, a very good weapon roughly comparable to the 88mm Flak 36. Massive orders were placed for the 90/53 in 1939/40, comprising 1087 in the static configuration, 660 in the field (towed) configuration, and 57

mounted on the backs of heavy trucks. Production here was slow as well, so that by July 1943 only 539 static and field guns had been produced.

By 1939 the army fielded 726 light (20/65) AA guns, 155 75/27 AA, and 92 75/46 AA guns. DICAT held 4,063 St. Etienne machine guns, 94 75/27, 452 76/40, 232 76/45, and 82 77/28 AA guns as its main armament for air defense of its field forces.

Army Anti-Aircraft in the Field

On Italy's entrance into the war in 1940 the Army's anti-aircraft forces were formed into five AA regiments and four separate battalions. Four of the regiments (1-4) each had two battalions, while the 5th Regiment had three battalions, for a total of fifteen battalions, each of two 4-gun 75mm batteries. The mobilization plan of 1939 called for 39 battalions of 75/46 guns, one for each corps and three for each of six field armies, all under five regiment HQs for administrative purposes, but this was clearly beyond the capabilities of Italian industry. Until production could ramp up the older 75/27 CK guns remained in service. The 20mm guns were formed, for the most part, into 51 small light AA batteries each of 8 guns for use as infantry divisional troops.

By 1941 the 75/46 had become the nominal standard army AA gun. Each 75/46 battalion consisted of a 63-man HQ, two to four 147-man batteries, and a 57-77 man service battery. The battery was built around its firing battery, which had Because of the slow rate of production the army's initial deployment of AA units to the field was less than impressive, as by June 1940 the Army still had only 19 mobile AA battalions in its order of battle. No anti-aircraft units accompanied the



An obsolete 75/27 CK anti-aircraft gun in North Africa in 1941

forces occupying Albania in 1939. Italian East Africa was defended by three batteries with a total of 24 20mm guns and the X Battalion with four batteries of 75/46. Supplementing these were two 3-battery battalions of 75/27 AA guns, one an MVSN unit and the other colonial artillery.

For a short-term fix for this problem, Italy turned to Germany, hoping to acquire a sizeable number of 88mm Flak 36 weapons. Hitler personally decided this issue, decreeing that Italy would only receive a single battalion set, that on an experimental basis. In early September 1940, however, Germany did agree to provide Italy immediately with nine battery sets of ex-Czech 75mm PL vz.37 guns (which Italy rechristened the 75/48) including fire control equipment and 10,000 rounds of ammunition per battery. These were used to form three new battalions (XLI, XLII, and XLIII), which were ready for service in October. Each of these motorized battalions had a strength of 14 officers, 21 NCOs, and 327 other ranks and manned twelve of these guns in three batteries.

As Italy planned its war of expansion further deployments were made as weapons and units became available. The sole battalion of 88/55 guns was sent to Cirenaica in July 1940. In late September 1940 three battalions of 75/46 were delivered to North Africa to guard the ports, VII for Benghazi, XV for Derna, and XVII for Bardia. At the same time, seven batteries of 20mm guns were also delivered for battlefield use, along with extra weapons for local distribution, totaling 116 guns. These were to provide one battery to each corps and division in the 5th Army. Surprisingly, none were apparently provided for the 10th Army facing Egypt.

These light batteries used a special "reduced" TO&E that economized on manpower and vehicles. Each consisted of a 19-man HQ, four 17-man platoons and a 6-man ammunition squad. Each platoon was provided with two "dovunque" trucks each towing a Model 35 gun and carrying 22 ammunition boxes. The ammunition squad had a heavy truck, while the HQ had a motorcycle and a light truck. The battery was not provided with any radios, relying instead on a 4-man telephone team in the HQ. The battery organization originally envisioned in May 1940 had called for a trains element with a heavy truck for fuel, kitchen gear and baggage, but this had been dropped from the organization as actually applied in October.

	Officers	NCOs	Other Ranks	Medium Machine Guns	Heavy AA Guns	Motorcycles	Field Cars	Dovunque rucks	Light Trucks	Medium & Heavy Trucks	Tractors
Field Anti-Aircraft Battalion (75/46) (Jan 1942)											
Battalion Headquarters											
Command Group	4	1	3	0	0	0	0	0	0	0	0
Fire Direction Center	0	1	6	0	0	0	0	0	0	0	0
Signal Section (wire)	0	1	14	0	0	0	0	0	0	0	0
Signal Section (radio)	0	1	10	0	0	0	0	0	0	0	0
Observer Section	0	1	8	0	0	0	0	0	0	0	0
Service Section	0	0	13	0	0	2	1	0	6	0	0
Two, Three or Four AA Batteries, each											
Battery Headquarters											
Command Group	1	0	0	0	0	0	0	0	0	0	0
Fire Direction Section	0	1	13	0	0	0	0	0	0	0	0
"Gamma" Fire Control Section	0	3	14	0	0	0	0	0	0	0	0
Signal Section (wire)	0	1	12	0	0	0	0	0	0	0	0
Signal Section (radio)	0	0	10	0	0	0	0	0	0	0	0
Observer Section	0	1	3	0	0	0	0	0	0	0	0
Service Section	0	1	9	0	0	2	1	0	3	0	0
Firing Battery	3	2	65	2	4	1	0	0	0	3	5
Trains Section	0	1	6	0	0	0	0	0	0	2	0
Service Battery											
Battery Headquarters	3	2	32	0	0	1	0	0	1	4	0
One Section per AA Battery, each	0	1	9	0	0	0	0	0	0	3	0
<i>note: change of July 1942:</i>											
<i>in each AA Battery:</i>											
Service Section	0	1	11	0	0	2	1	0	4	0	0
Firing Battery	3	2	66	2	4	1	0	0	1	3	5
Field Anti-Aircraft Battalion (90/53) (Aug 1942)											
Battalion Headquarters											
<i>as in 75/46 battalion</i>											
Three or Four AA Batteries, each											
Battery Headquarters											
Command Group	1	0	0	0	0	0	0	0	0	0	0
Fire Direction Center	0	1	9	0	0	0	0	0	1	0	0
"Gamma" Fire Control Section	0	3	18	0	0	0	0	0	0	0	0
Signal Section (wire)	0	1	10	0	0	0	0	0	0	0	0
Signal Section (radio)	0	0	10	0	0	0	0	0	0	0	0
Observer Section	0	1	3	0	0	0	0	0	0	0	0
Service Section	0	1	12	0	0	0	0	0	0	0	0
Firing Battery	3	2	74	2	4	0	0	0	1	2	9
Trains Section	0	1	8	0	0	0	0	0	0	4	0
Service Battery											
Battery Headquarters	3	2	12	0	0	2	0	3	0	0	2
One Section per AA Battery, each	0	1	9	0	0	0	0	0	0	3	0
Anti-Aircraft/Anti-Tank Battalion (75/46 & 88/55)											
Battalion Headquarters											
Command Group	7	2	5	0	0	0	0	0	0	0	0
Fire Direction Section	0	1	9	0	0	0	0	0	0	0	0
Signal Section (wire)	0	1	18	0	0	0	0	0	0	0	0
Signal Section (radio)	0	1	14	0	0	0	0	0	0	0	0
Service Section	0	0	23	0	0	3	1	0	6	0	0
Two or Three Batteries, each											
Battery Headquarters											
Command Group	1	1	4	0	0	0	0	0	0	0	0
Fire Direction Section	0	2	7	0	0	0	0	0	0	0	0
"Gamma" Fire Control Section	0	1	14	0	0	0	0	0	0	0	0
Signal Section (wire)	0	1	13	0	0	0	0	0	0	0	0
Signal Section (radio)	0	0	6	0	0	0	0	0	0	0	0
Service Section	0	0	6	0	0	2	1	0	5	0	0
Firing Battery	3	2	71	2	4	1	0	5	1	4	5

Field AA & AA/AT Battalions

For the attack on Greece, only two AA battalions were included in the order of battle of the field forces, IV under 11th Army and XIX under 9th Army, both with the new 75/46 weapons. In October the XLI Battalion of 75/48s was sent to Albania to guard the ports, followed shortly by the XLIII Battalion.

The collapse of the Italian forces in Egypt brought about a hurried shifting of units. The Germans parted with some more 88mm guns to reequip 75/27 battalions and in March 1941 a new field AA force, the largest deployed so far, was shipped to North Africa. This was the 2nd Motorized AA Regiment (*Regimento c.a. Autocampale*), consisting of the XVIII and XXIX Battalions of 88/55, the XLII and XLIII Battalions of 75/48, and the XIV Battalion of 75/27. Also brought over was the I Battalion of cc.nn. light AA, comprising the 202nd-206th 20mm batteries for airfield defense.

	Officers	NCOs	Other Ranks	Medium Machine Guns	Anti-Aircraft Guns	Motorcycles	Field Cars	Light Trucks	Heavy Trucks	Tractors
Anti-Aircraft Battalion (75/46)										
Battalion Headquarters										
Command Group	5	1	3	0	0	0	0	0	0	0
Fire Direction/Observer Section	0	1	10	0	0	0	0	0	0	0
Signal Section (wire)	0	1	14	0	0	0	0	0	0	0
Signal Section (radio)	0	1	10	0	0	0	0	0	0	0
Trains Section	0	0	14	0	0	3	1	5	0	0
Two or Three AA Batteries, each										
Battery Headquarters										
Command Group	1	0	2	0	0	0	0	0	0	0
Fire Direction Center	0	1	8	0	0	0	0	0	0	0
"Gamma" Fire Control Section	0	2	14	0	0	0	0	0	0	1
Signal Section (wire)	0	1	8	0	0	0	0	0	0	0
Signal Section (radio)	0	0	6	0	0	0	0	0	0	0
Service Section	0	1	10	0	0	2	1	2	0	0
Firing Battery	3	2	66	2	4	1	0	0	4	5
trains elements	0	1	9	0	0	0	0	1	1	0
Service Battery										
Battery Headquarters	3	4	27	1	0	3	0	1	4	0
One Section per AA battery, each	0	1	5	0	0	0	0	0	1	0
Anti-Aircraft Battalion (90/53 Autocannoni)										
<i>as above, except:</i>										
Battalion Headquarters:										
Trains Section	0	0	15	0	0	3	1	5	0	0
Each AA Battery:										
Firing Battery	3	2	68	2	4	1	0	0	*10	0
Service Battery										
Battery Headquarters	3	4	28	1	0	3	0	1	4	0
One Section per AA battery, each	0	1	13	0	0	0	0	0	4	0
* includes 4 Lancia 3/Ro heavy trucks carrying the 90/53 guns.										
Field Anti-Aircraft Battalions, North Africa Type, from June 1942										

For the invasion of Yugoslavia, where air opposition would be slight, the 2nd Army fielded one battalion (XXI) of 75/27 guns, while each of its subordinate corps (except one) had two batteries of 20mm guns for AA defense.

Despite the high hopes placed in the 75/46 by the army, production was never sufficient to meet its needs. Only 76 had been delivered by 1939,

and although orders were quickly placed for an additional 240 field models and 232 static models (the latter for DICAT), by the end of 1942 only 226 field and 45 static models were actually in service. Two battalions (IV and XIX, each of two batteries) were attached to the 30th Corps Artillery Regiment in mid-1941 to support the CSIR on the eastern front. With the expansion of the Italian contribution to the 8th Army in 1942 the AA force on the Soviet front was expanded to consist of the 4th AA Regiment HQ with two 2-battery battalions (IV and XIX) and three 3-battery battalions (XXXVI, XXXVII, and XXXVIII) of 75/46. They were supplemented by four 8-gun 20mm Model 35 batteries as army units, two more such batteries in each of the three corps elements, and two more in each of the nine divisions. These light batteries all used the standard TO&E discussed in the "infantry" section with four 2-gun platoons.

By May 1942 production of the 75/46 exceeded loss replacement sufficiently to permit four 100/17 field howitzer battalions to be converted to 75/46 AA battalions (XLVIII, LXXIV, and LXXV, each of 3 batteries, and XLIX with one battery). This was accompanied by a new TO&E for a dual-purpose AA/AT battalion for use with modern AA guns, not only the 75/46 but also the 88/56 if used in the future. These units dispensed with the service battery normally found in the artillery by incorporating five "dovunque" trucks for ammunition (840 rounds per truck in the case of 88mm weapons) in the firing battery, along with four Lancia 3/Ro heavy trucks to tow the guns. The TO&E provided for a Gamma FCS in each battery, but these were specifically excluded from this group of battalions.

In June 1942 a separate set of TO&Es was issued for AA units in North Africa as part of the AS.42 reorganization. In comparison with the metropolitan organization, the 75/46 battalion in North Africa lost its observation sections (and their associated radio teams) while moving ammunition carriage forward. The observation sections were apparently considered expendable because of the flat, open terrain of the desert and the use of these units in the anti-tank role as well as anti-aircraft. The North Africa units gained a third ammunition-carrying heavy truck (with 500 rounds) in each firing battery, but lost two such vehicles in each service battery section.

There were few such units in North Africa, however, for all available transport was being given over to supplies and tanks. Reinforcements

rushed over to Tunisia in late 1942 allowed some rebuilding of the Italian AA forces, bringing the 2nd AA Regiment back up to three battalions (LXXXIX and XC of 75/46 and CLXX of 75/27), along with three 75/46 batteries for the garrison of Sfax, three more for Gabes, a 75/48 battalion for the Spezia division, another for the Trieste division, and the XLVIII Battalion of 76/46 for attachment to the GGFF division.

A TO&E was published for the battalion of 90mm *autocannoni* in North Africa at the same time. The only unit to adopt this organization at that time apparently was the MXII Battalion, which served in North Africa from late 1942, although the armored divisions included similar units with both 90mm and 20mm weapons.

Areas not under active air threat, of course, suffered from the shortages even more. By mid-1943 Italian forces in Greece disposed of only two battalions of 76/40 (LXIII and LXIV) and one of 75/50 (XLV) defending the Corinth Canal under the 38th AA Regiment HQ, along with one battalion of 75/27 (III) and two of 76/40 (LXI and LXII) elsewhere in the country.³ At the same time, the forces in the Aegean had one battalion of 75/27 (LXXXII) on Cos and two more such battalions (LXXXIII and LXXXIV) on Rhodes. The sole modern weapons in the area were two batteries (231 & 232) of 90/53 guns on Rhodes.

Few light AA battalions were raised during the war for field use, the army instead relying on the 20mm batteries in each division and a few more such batteries handed out to the corps. Seven batteries were ordered to Libya on 1 October 1940 to serve with divisions and corps. These used a unique new organization table for that theater that, surprisingly, reduced the transport assets.

A platoon consisted simply of two 20mm M.35 guns with dovunque trucks that carried the 6-man crew and 22 boxes of ammunition. The platoon commander, rangefinder, and one general duties soldier were

	Officers	NCOs	Other Ranks	20mm AA Guns	Motorcycles	Cars	Light Trucks	Trucks
Battery Headquarters	1	1	17	0	1	1	1	0
Four Platoons, each	1	1	15	2	0	0	0	2
Ammunition Section	0	1	5	0	0	0	0	1

20mm Battery, North Africa, from October 1940

³Two battalions with modern weapons (XXXIX and XLVII of 75/46) served as attachments to the "Cagliari" Division in southern Greece in October 1942, but these had been removed, presumably back to the homeland, by April 1943.

split between the two trucks. A five-man ammunition section was provided with a single heavy truck. The battery HQ included seven signalmen, presumably telephonists, but no additional fire control personnel.

A precursor battalion, the I 20mm Battalion of the MVSN was sent to North Africa in early 1941 with five batteries (numbers 202-206) for airfield defense, but no further units followed immediately. For defense of the Tunisia bridgehead, however, the need for such units was clear. In late 1942 the army shipped over the 50th Light AA Regiment (I Light AA Battalion with three 20mm batteries, and the X AA Battalion with one battery of 75/46), the 37th AA Group (L and LI Battalions of 20mm and the CLIV Battalion with 12.7mm MGs), and the 39th AA Group (CLVI and CLVII Battalions of 12.7mm MGs). No further such units, however, appear to have been formed.

Army Anti-Aircraft at Home

Army air defense units still in Italy were placed in a reinforcing status (*schierate a rinforzo*) to support the DICAT command responsible for homeland defense in late 1940. Initially, they had little that they could contribute, but in January/February 1941 the army was tasked to provide the personnel for 52 batteries of old 75/27 Model 906 guns. By July 1942 the army was still only able to contribute two field battalions (6 batteries) of 90/53, 20 field batteries of 75/27, along with 6 of 75/46 and 4 of 75/51, along with contributing the personnel for 39 static batteries of 75/27.

In frustration, the army ordered the formation in May 1942 of 30 anti-aircraft mortar batteries for homeland defense, static units each with sixteen 81mm mortars to be used as barrage fire weapons. It is possible that SMRE never intended to actually field these absurdly ineffective weapons, but instead hoped for German sympathy. If so, they succeeded in this, for on 18 September eleven of the mortar batteries were ordered converted to 88mm static batteries using guns supplied by their German allies, and the remainder were ordered converted in December.

The initial conversion program resulted in the 1333rd-1343rd 88mm static AA batteries, some with two 2-gun platoons, others with three. This was followed on 18 December 1942 by an SMRE order converting eight 75/27 AA battalions (L - LVII) and two *GaF* 75/27 battalions (XLIV and C) to 88mm static AA battalions (XXVII, XXXII - XXXIV, CXIV, CX - CXIII, CXV) each with

three subordinate batteries (numbered 1344-1373). Two more batteries (1374 & 1375) were ordered formed on 20 December by taking two guns from each of four 6-gun batteries. This was followed shortly by the conversion of the remaining 81mm AA mortar batteries (probably renumbered 1376-1394).

Under the TO&Es issued at this time the 88mm battalion HQ was a small unit that provided two sergeants and two privates as observers, a telephone signal group of 2 sergeants and 16 privates, three privates as radio operators, and assorted trains personnel. Each battery was made up of a 52-man HQ, two 25-man heavy platoons, and an 18-man light platoon. The battery HQ had no radios, relying instead on an 8-man wire signal section. It also included three officers (commander, deputy commander, and fire control officer), a sergeant for observer duties, a sergeant for fire control duties, a six-man optical rangefinder squad, and a 9-man fire control detachment. Each heavy platoon consisted of two 10-man 88mm gun squads, three observer privates, two artificers, a sergeant and a private. The light platoon included two 6-man gun crews for 20mm AA guns, three observers, and two optical rangefinder personnel. Expansion of the 88mm batteries to three platoons (six guns) was authorized, but appears to have been limited to a minority of the units.

	Officers	NCOs	Other Ranks	Medium Machine Guns	20mm AA Guns	37 & 40mm AA Guns	75-90mm AA Guns	Motorcycles	Field Cars	Trucks	Bicycles
Regiment Headquarters											
Command Group	6	0	0	0	0	0	0	0	0	0	0
Fire Control Team	1	2	4	0	0	0	0	0	0	0	2
Signal Section	1	3	21	0	0	0	0	0	0	0	2
Other personnel	1	3	34	0	0	0	0	2	1	2	0
Each Battalion Headquarters											
Command Group	5	1	0	0	0	0	0	0	0	0	0
Fire Control Team	1	3	4	0	0	0	0	0	0	0	0
Signal Section	0	4	21	0	0	0	0	0	0	0	2
Other personnel	0	0	22	0	0	0	0	3	0	4	0
(Radar Section)*	0	3	14	0	0	0	0	0	0	0	0
Each Light AA Battery											
Battery Headquarters	1	1	24	0	0	0	0	0	0	2	2
Two, Three or Four Platoons, each	1	1	11	0	2	0	0	0	0	0	0
Each Medium AA Battery (without central fire control)											
Battery Headquarters	1	0	22	0	0	0	0	0	0	2	2
Two, Three or Four Platoons, each	1	1	16	0	0	2	0	0	0	0	0
Each Medium AA Battery (with central fire control)											
Battery Headquarters	1	3	25	0	0	0	0	0	0	2	2
Two, Three or Four Platoons, each	1	1	14	0	0	2	0	0	0	0	0
Each Heavy AA Battery											
Battery Headquarters	1	1	20	2	0	0	0	0	0	2	2
Rangefinder Team	0	1	8	0	0	0	0	0	0	0	0
Signal Team	0	1	6	0	0	0	0	0	0	0	0
Fire Control Team	0	2	9	0	0	0	0	0	0	0	0
Two or Three Platoons, each	1	1	21	0	0	0	2	0	0	0	0
(Radar Section)*	0	3	14	0	0	0	0	0	0	0	0
(Sound Detector Section)*	0	2	11	0	0	0	0	0	0	0	0

* radar and sound detector sections not always present.

Static AA Units, Army & DICAT, from May 1943

In November 1942 the army was able to divert 82 Model 35 20mm guns to homeland defense and with these ordered the activation of fifteen light

static AA batteries (1011, 1012, 1030-1037, and 1053-1057), each with two or three 2-gun platoons. In December two more static 75mm battalions were raised (CIII and CV, with batteries 1104-1106, 1112, 1114, and 1118).

Small numbers of further 88mm static batteries were raised in early 1943, including Batteries 1441-1444 in January, but the pace of these activations was dictated by the availability of surplus German Flak 18/36 weapons. As

	Officers	NCOs	Other Ranks	20mm AA Guns	37mm AA Guns	88mm AA Guns	60cm Searchlights	Motorcycles	Field Cars	Trucks	Bicycles
Organization of December 1942											
Static Heavy AA Battalion											
Battalion Headquarters											
Command Group	6	7	6	0	0	0	0	0	0	0	1
Signal Section	0	2	19	0	0	0	0	0	0	0	0
Trains	0	1	17	0	0	0	0	2	1	2	1
Three Heavy AA Batteries, each											
Battery Headquarters	3	8	36	0	0	0	0	2	0	2	3
Two Heavy Platoons, each	0	3	22	0	0	2	0	0	0	0	0
Light Platoon	0	3	15	2	0	0	0	0	0	0	0
Organization of May 1943											
Regiment Headquarters											
Command Group	13	8	46	0	0	0	0	3	2	1	0
Fire Control (Plotting) Platoon	1	5	22	0	0	0	0	0	0	0	0
Signal Platoon	1	7	45	0	0	0	0	0	1	4	0
Trains	1	4	16	0	0	0	0	1	0	3	0
Each Light AA Battalion											
Battalion Headquarters	5	6	38	0	0	0	0	2	1	4	2
Three Light AA Batteries, each											
Battery Headquarters	2	5	27	0	0	0	0	1	0	2	3
Four or Five Light Platoons, each	1	4	16	3	0	0	0	0	0	0	0
Searchlight Platoon	0	3	19	0	0	0	5	0	0	0	0
Each Heavy AA Battalion											
Battalion Headquarters	6	10	55	0	0	0	0	2	1	4	2
Two, Three or Four Heavy AA Batteries, each											
Battery Headquarters	3	11	56	0	0	0	0	2	0	2	3
Two Heavy Platoons, each	0	2	27	0	0	2	0	0	0	0	0
Light Platoon	0	3	11	2	0	0	0	0	0	0	0

Static AA Units with German Equipment, 1943

the German manpower situation became more critical, however, the *Luftwaffe* began to appreciate the advantages of turning over older equipment to allies as units transitioned to new weapons, particularly the newer models of 88mm guns.

Finally, in May 1943 agreement was reached between the two Axis partners that called for eight German heavy static AA battalion HQs, three light AA battalion HQs, 30 static heavy AA batteries, and ten light AA batteries to hand over their equipment

to the Italian Army in preparation for reequipping. Small additional quantities of weapons and equipment were also supplied and this enabled SMRE to order the activation of twelve static 88/55 AA battalion HQs (CXXXII, CXXXIII, CXXXV - CXLI, and CXLIII - CXLV), three 20mm AA battalion HQs (CLI - CLIII), thirty-six 88mm static batteries (1396, 1398, 1399, 1400-1420, 1424-1435) and fifteen 20mm static batteries (1501-1515) on 4 June 1943.

Since the Germans turned over not only the guns, but also the full sets of battery equipment the organization of these units differed somewhat from the earlier 88mm units. The most significant difference was the presence in these second-generation batteries of a squad of two sergeants and five privates in the fire direction/observer section to man the *Wurzburg* fire-control radar. Also added were six privates for observation duties and a sergeant and a private for the generators. The 88mm platoon gained four ammunition bearers, while the light platoon lost one crewman per gun, an observer, and a rangefinder man.

During the war the Germans provided about 560 88mm guns, the vast majority of them between December 1942 and July 1943. This was not the only source of weapons, however, as Italian industry continued to turn out its excellent 90/53 weapon, albeit at a slow pace. Some of the 81mm AA mortar batteries that began conversion to 88mm batteries were actually reequipped with 90/53 weapons before their conversion was complete, including twelve batteries (451, 452, 455, 456-458, 461, 462, 478, 479, 482 and 483) for Sardinia that retained their original AA mortar numerical designations. Each of these batteries had a strength of one captain, three lieutenants, six NCOs, and 85 other ranks, with four 90mm guns, one optical rangefinder, four aiming circles, and no vehicles. In April 1943 "BGS" fire control stations were added to ten of the Sardinia batteries and "Gamma" fire control stations to the other two. In May 1943 two new 90/53 static battalions (CLXXXIX with batteries 303 and 304, and CXCIV with batteries 480 and 481) were ordered activated, followed by Battalions CLXIV and CLXV (batteries 566-571) in June.

In May 1943 a new series of TO&Es for static AA units not using German equipment was published. These did not incorporate any striking new features except for the optional provision in each battalion HQ for a radar section comprising a 9-man radar operating squad and an 8-man parallax correction table squad. An additional five men were authorized if the battalion included the "Malsi 43" fire control equipment. A similar radar section was also optional for each heavy battery, but it seems unlikely that many were so equipped. The static AA units were not initially authorized any radios for communications, although some may have been so equipped later on.

Such mobile AA as were available in 1943 were dispatched to Sicily and Sardinia in anticipation of the expected Allied invasion. Three battalions of 75/46 guns (LXXV, LXXVIII, and LXXX) were ordered to Sicily in mid-May, along with two 90/53 *autocannoni* battalions (DV and DIX) for Sicily and two more (DX and DXI) for Sardinia.

A small number of units serving in the colonies were designated as coastal and anti-aircraft dual-purpose units. The largest was the 30th *raggruppamento artiglieria costiera e contraereo*, which was based in Tripoli pre-war and was reinforced with German equipment in early 1941 so that by 1 April 1941 it had the following composition:

- C Coastal & AA Battalion
 - 3 coastal/AA batteries (76/40), 1 AA battery (77/28)
- CI Static Battalion
 - 1 coastal/AA battery (76/40), 3 AA batteries (77/28)
- I Static MVSN AA Battalion
 - 4 AA batteries (two 76/40, two 76/45)
- I MILMART Artillery Battalion
 - 3 AA batteries (102/35)
- XVII AA Battalion
 - 3 AA batteries (88/56)
- XXIX AA Battalion
 - 3 AA batteries (88/56)

The only other unit so designated was the V Coastal/AA Battalion based at Bardia.

The DICAT Contribution

Homeland air defense was entrusted to the DICAT arm of the MVSN. The rationale was that static air defense was less demanding physically than field service, and that by restricting the DICAT to recruiting only those over 30 years of age and those in lower physical categories, more personnel would be available for field service with the Army. At the outbreak of the war DICAT was divided into three air defense zones, five legion groups, and 22 legions. These were divided as follows:

- I Air Defense Zone
 - Legion Group Turin
 - 1st Legion (Turin)(4 AA bns, 6 AAMG cos)
 - 2nd Legion (Genoa)(5 AA bns, 5 AAMG cos)
 - 14th Legion (Turin)(4 AA bns, 6 AAMG cos)
 - 15th Legion (Savona)(4 AA bns, 5 AAMG cos)
 - 16th Legion (Alessandria)(2 AA bns, 11 AAMG cos)

Legion Group Milan

3rd Legion (Milan)(6 AA bns, 15 AAMG cos)

4th Legion (Verona)(4 AA bns, 5 AAMG cos)

6th Legion (Bologna)(4 AA bns, 6 AAMG cos)

17th Legion (Novara)(2 AA bns, 10 AAMG cos)

18th Legion (Brescia)(2 AA bns, 10 AAMG cos)

Legion Group Trieste

5th Legion (Trieste)(4 AA bns, 3 AAMG cos)

11th Legion (Udine)(4 AA bns, 5 AAMG cos)

19th Legion (Padua)(2 AA bns, 10 AAMG cos)

21st Legion (Venice)(2 AA bns, 13 AAMG co

II Air Defense Zone

Legion Group Rome

7th Legion (Florence)(4 AA bns, 3 AAMG cos)

8th Legion (Rome)(4 AA bns, 5 AAMG cos)

10th Legion (Naples)(4 AA bns, 5 AAMG cos)

20th Legion (Pisa)(2 AA bns, 10 AAMG cos)

III Air Defense Zone

Legion Group Bari

9th Legion (Bari)(4 AA bns, 5 AAMG cos)

12th Legion (Palermo)(4 AA bns, 5 AAMG cos)

13th Legion (Cagliari/Sassari)(4 AA bns, 10 AAMG cos)

22nd Legion (Messina)(2 AA bns, 10 AAMG cos)

Unfortunately, all of these units were equipped with obsolete weapons, the army having first call on modern AA guns. Of the 224 heavy batteries in service in June 1940, 200 were equipped with 76/40 and 76/45 guns, 12 with 77/28 guns, and six each with 75/27 and 102/35, all First World War relics. The AA machine gun companies were each equipped with twelve 8mm St. Etienne machine guns, also survivors of the previous war. Further, the DICAT was essentially a part-time force until mobilization in 1940. In 1939 the branch numbered only 201 officers and 1,541 enlisted as permanent (regular) personnel to man the quantitatively impressive force structure above.

Modernization of DICAT forces was excruciatingly slow. Germany provided three battalions worth of 88/55 guns in the autumn of 1940, but these were soon diverted to use in North Africa. They also provided 140 Oerlikon 20mm guns in July-November 1941 and a further 210 between December 1941 and April 1942. The bulk of these were apparently used to reequip the DICAT machine gun companies with capable weapons. Deliveries of the 90/53 static mount to DICAT began in early 1941 but slowed down in mid-1942. The 37/54 medium AA gun was a useful weapon but did not show up

in useful numbers until late 1941.

Each medium (37mm) and heavy (75-102mm) DICAT battery manned four guns. They were static formations with no tactical mobility, using TO&Es similar to those of the static Army units. In action, the efforts of the DICAT units were supplemented by those of army and navy AA units (as well as German units) in the vicinity, although through the end of 1942 most of these units were army elements equipped with 75/27 guns and thus of little practical assistance.

An example of a DICAT Legion is the 1st, guarding Turin, in June 1942, when it consisted of

- 1st & 2nd MG Cohorts (total 8 platoons)
- 17th Battalion
 - 47th, 48 & 49th Batteries 76/45
 - 601st Battery 90/53
- 18th Battalion
 - 50th & 51st Batteries 76/45
 - 52nd & 53rd Batteries 76/40
 - 602nd Battery 90/53
- 19th Battalion
 - 54th & 55th Batteries 76/45
 - 56th & 57th Batteries 76/40
- 20th Battalion
 - 58th & 59th Batteries 76/45
 - 603rd Battery 90/53
- 21st Battalion
 - 17th & 21st Batteries 76/40
 - 60th & 61st Batteries 76/45
- 1st Light Cohort
 - 701st, 702nd & 703rd Batteries 20mm
- 2nd Light Cohort
 - no firing batteries
- 3rd Light Cohort
 - 704th & 705th Batteries 20mm
- 4th Light Cohort
 - no firing batteries

In addition, the legion was responsible for 3 batteries of 20mm, 3 of 37/54, 1 of 76/40, and 2 of 76/45 stationed elsewhere.

	37/54	75 Vic	75/27	75/45	75/46	75/50	75/51	76/40	76/45	77/28	88/56	90/53	100/47	102/35
DICAT Medium/Heavy Batteries														
Jun-40	0	0	6	0	0	0	0	200	**	12	0	0	0	6
Jul-40	0	0	6	0	0	0	0	200	**	12	0	0	0	6
Sep-40	0	0	6	0	0	0	0	194	**	12	9	0	0	6
Nov-40	0	0	6	0	6*	0	0	194	**	12	3	0	0	5
Jan-41	0	0	6	0	6*	0	0	194	88	12	5	7	0	5
Mar-41	0	0	6	0	0	0	0	191	**	13	7	13	0	5
May-41	0	0	6	1	0	0	0	129	52	13	3	24	0	5
Jul-41	0	3	6	1	0	0	0	129	52	13	3	30	0	5
Sep-41	0	5	6	1	0	0	0	128	52	13	3	40	0	5
Nov-41	16	5	6	1	5	0	0	128	50	14	3	44	0	5
Mar-42	21	5	6	1	14	0	0	128	51	14	0	57	0	6
May-42	30	5	6	1	12	0	0	128	51	14	0	58	0	6
Jul-42	45	5	7	1	12	0	0	127	47	14	0	61	0	6
Sep-42	46	5	7	1	8	0	0	127	47	14	0	68	0	6
Nov-42	64	5	7	1	13	0	0	121	44	14	0	65	0	6
Dec-42	64	5	7	1	17	0	0	121	44	14	0	65	0	6
Attached & Supporting Medium/Heavy Batteries														
Jun-40	0	0	?	0	?	?	?	?	0	0	?	?	?	?
Jul-40	0	0	?	0	?	?	?	?	0	0	?	?	?	?
Sep-40	0	0	?	0	?	?	?	?	0	0	?	?	?	?
Nov-40	0	0	?	0	?	?	?	?	0	0	?	?	?	?
Jan-41	0	0	8	0	0	0	0	0	0	0	0	0	0	0
Mar-41	0	0	58	0	0	0	0	3	0	0	0	0	0	0
May-41	0	0	83	0	0	0	0	3	0	0	0	0	0	0
Jul-41	0	0	69	0	0	0	0	5	0	0	0	0	0	0
Sep-41	0	0	71	0	0	0	0	12	0	0	0	0	1	0
Nov-41	0	0	71	0	0	0	0	11	0	0	***5	0	0	2
Jan-42	3	0	78	0	4	0	0	16	0	0	***18	2	1	2
Mar-42	2	0	78	0	0	0	0	16	0	0	***16	2	1	2
May-42	2	0	68	0	0	0	0	16	0	0	***15	2	1	2
Jul-42	1	0	61	0	6	0	4	22	0	0	***12	8	1	2
Sep-42	1	0	55	0	6	2	4	19	0	0	***12	9	1	2
Nov-42	2	0	52	0	6	2	4	19	0	0	***8	7	1	2
Dec-42	2	0	52	0	0	2	4	19	0	0	***66	9	1	2
DICAT and Attached/Supporting Light Anti-Aircraft Guns														
	8mm St.E		13.2mm		15mm		20mm Breda		20mm Oerlikon		* 75/48 Skoda ** included in 76/40 column (separate breakdown not available) *** German Army & Air Force units			
	DICAT	Supporting	DICAT	Supporting	DICAT	Supporting	DICAT	Supporting	DICAT	Supporting				
Jun-40	4137	0	0	0	0	0	828	0	0	0				
Jul-40	4137	0	0	0	0	0	828	0	0	0				
Sep-40	4239	0	0	0	0	0	800	0	0	0				
Nov-40	4242	0	0	0	0	0	1286	0	25	0				
Jan-41	4248	0	0	0	0	0	1415	0	155	0				
Mar-41	3639	0	0	0	0	0	1355	376	155	0				
May-41	3652	0	0	0	0	0	876	347	155	0				
Jul-41	3608	0	0	0	0	0	883	182	155	0				
Sep-41	3538	0	0	0	0	0	956	204	153	0				
Nov-41	3546	0	0	3	0	0	989	187	189	0				
Jan-42	3546	0	0	3	0	0	1181	205	150	0				
Mar-42	3546	0	0	9	7	0	299	160	201	0				
May-42	2138	0	0	9	7	0	339	174	201	0				
Jul-42	2138	0	0	13	18	0	429	234	201	0				
Sep-42	2138	0	0	13	18	0	297	162	281	0				
Nov-42	2138	0	0	13	18	0	484	252	281	0				
Dec-42	2138	0	0	13	18	0	649	236	281	0				

Note: first two tables are expressed in batteries, third is in guns.

Homeland Anti-Aircraft Assets, 1940-1942

Anti-Tank Artillery

The artillery branch did little to overcome the army's lamentable weakness in anti-tank firepower. Throughout the entire war Italian industry did not build a single specialized anti-tank gun. The infantry branch raised five anti-tank battalions, discussed under that branch, using the 47/32 Bohler design, but that was a dual-purpose AT/infantry support gun, showing the compromises necessary. The 90/53 was vastly more powerful but was primarily an anti-aircraft weapon.

For the 8th Army on the eastern front some additional AT firepower was clearly necessary and SMRE ordered the creation of the 201st Motorized Artillery Regiment. This unit was armed with the 75/32 gun, originally designed to replace the 75/27 as the standard motor-drawn field gun of the army, but production was sluggish, and not many were built. By early 1942 enough had been delivered for three 12-gun battalions, but by this time the need for modern anti-tank weapons on the eastern front had become so clearly pressing that the 201st Regiment, with its three battalions, was retrained for the anti-tank role. It retained its field artillery organization, which was wasteful of manpower, and indeed was not actually designated an anti-tank regiment.⁴ It was effectively destroyed on the eastern front in early 1942.

The artillery branch also formed semoventi units using 75mm, 90mm and 105mm armored guns, and these are covered in the section on armor.

⁴The regiment used the TO&E of the motorized 75/18 regiment.

Coastal Artillery

Coastal artillery, except for the defense of naval bases, was handed over to the Militia in 1935, which formed a special branch for these weapons that in 1937 was designated the *Milizia Artiglieria Marittima (MILMART)*. The MILMART was organized into eight Legions (=regiments) pre-war. Tactically MILMART operated under the army, and wartime expansion of the coastal artillery force appears to have been accomplished entirely by army units, rather than adding to the Militia. This expansion was fairly rapid once the war started. Coastal artillery strength (excluding navy units) at representative dates were:

	Feb 41	Dec 41	Sep 42
Coast Art Regt HQs	9	11	18
Coast Art Bn HQs	57	59	70
Coast Art Bty	166	217	243

The pace of expansion picked up somewhat as the fall of Axis North Africa became imminent. In December 1942 SMRE ordered the activation of a further twelve light batteries (509-520) and eight heavy batteries (601-608), followed shortly by a mixed battalion (CXIX with two light batteries and two medium batteries) for Corsica. In February 1943 activation orders were issued for one battalion with 155mm GPF (CLXXII with batteries 285-288), six battalions of 75/27 (CXXXVII-CXLII with batteries 451-468), eight batteries of ex-French 155/14 (363-370), one battery of 105/27 (182), ten batteries of 152/13 (546, 547, 605-608, 616, 617, 626, 627), and ten batteries of 149/35 (530-532, 543-45, 602-604, 650). This was followed by a high-priority crash effort to raise five 149/35 battalions (CLX-CLXIV) for Sicily.

In March 1943, pressed by the threat to Sicily, Sardinia, and Corsica, the Germans released another shipment of captured weapons and this permitted the formation of eight batteries (546, 547, 549, 550, and 605-608) with ex-Soviet 152mm M37 gun-howitzers, two (324 and 325) with ex-Soviet 122mm M31 guns, four (519, 520 629 and 630) with ex-French 155mm GPF guns, and ten batteries (371-380) with ex-Soviet 76.2mm guns.

The army and MILMART concentrated almost all of its energies on the defense of Italy proper, leaving colonial defense primarily to the navy. small number of units were shipped to occupied Greece, most notably three batteries ordered raised by the 4th Army Artillery Regiment Depot at Milan on 13 June 1942: the 911th Battery (four 102/50 guns), and the 921st and 922nd Batteries (each one twin-mount 203/45 naval turret). These three batteries formed the CIX Coast Artillery Battalion, emplaced on the Peloponnesian coast guarding the entrance to the Gulf of Patrai.

The coastal artillery formations were austere units containing only the minimum manpower necessary to operate their weapons. A battery was built around two or three identical firing platoons, each usually with two weapons. The standard light (75-100mm) platoon consisted of the platoon leader with his attendant, a bugler/messenger, two gun commanders (one sergeant and one corporal), and twelve gun crew to man the two weapons.

Platoons with medium (105-155mm) caliber guns were identical except that the number of gun crewmen increased to 18, except in the case of units with ex-French 155/45 guns which had 28 gun crewmen. Heavy caliber platoons (190-300mm) generally had four weapons per platoon, with four gun commanders (three of them corporals) and 15 crewmen per gun along with 4 artificers. Extra-heavy platoons (305mm and larger) reverted to a two-gun organization and had 14 crewmen per gun plus 2 artificers.

	Officers	NCOs	Other Ranks	Medium Machine Guns	Artillery Pieces	Motorcycles	Field Cars	Light Trucks
Regiment Headquarters	6	0	0	0	0	0	0	0
Headquarters Platoon								
Platoon Headquarters	1	3	5	0	0	0	0	0
Fire Direction Section	0	1	3	0	0	0	0	0
Signal Section	0	1	10	0	0	0	0	0
trains elements	0	0	27	0	0	2	1	2
Each Coastal Artillery Battalion								
Battalion Headquarters								
Command Group	5	1	5	0	0	0	0	0
Fire Direction Section	0	1	3	0	0	0	0	0
Observation Section	0	1	3	0	0	0	0	0
Signal Section	0	1	10	0	0	0	0	0
trains elements	0	0	14	0	0	1	0	4
Each Coastal Battery								
Battery Headquarters								
Command Group	1	1	5	0	0	0	0	0
Fire Direction Section	0	1	15	0	0	0	0	0
Observation Section	0	1	3	0	0	0	0	0
Signal Section	0	1	6	0	0	0	0	0
Local Defense Section	0	0	6	2	0	0	0	0
trains elements	0	0	10	0	0	0	0	1
Two or Three Platoons, each								
with light caliber guns	1	1	15	0	2	0	0	0
with medium caliber guns	1	1	21	0	2	0	0	0
with heavy caliber guns	1	1	69	0	4	0	0	0
with extra-heavy caliber guns	1	1	33	0	2	0	0	0

Army Coast Artillery Organization, from May 1943

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The battery headquarters was identical regardless of the size of the weapon employed. It included small fire direction, observation, and signal sections. The signal section relied entirely on telephones and semaphores. A two-man radio team was authorized as optional, but not all batteries had them. Two of the fire direction crewmen doubled as operators of short-

Sector	Battalion	Batteries	Sector	Battalion	Batteries
		Sicily			Venezia-Giulia
VIII Bde	XXI	2 x 75/27	"Trieste"	CXXXIII	2 x 105/15
202 Div	XX	3 x 149/35		CXXXV	1 x 149/35
	XXII	2 x 75/27, 1 x 105/27, 1x149/35			Emilia-Marche
	LV	3 x 75/27	1 Regt	CLI	2 x 90/53, 1 x 149/35
	LVI	3 x 75/27			Toscana-Lazio
	LXXXVIII	1 x 75/27, 1 x 105/14	215 Div	XXIII	3 x 75/27
	LXXXIII	1 x 75/27		XXIV	2 x 75/27, 2 x 149/12
	CXLI	3 x 75/27		XXV	2 x 149/12, 1 x 149/13
	CLXIII	3 x 149/35		XCIV	2 x 75/27, 1 x 105/14, 1 x 105/27, 1 x 105/28, 2 x 149/35
206 Div	CII	2 x 75/27		CXVI	3 x 149/12
	CLXI	3 x 149/35	216 Div	II	4 x 75/27
	CLXII	2 x 149/35		VII	1 x 75/27, 1 x 105/14, 1 x 105/27, 1 x 149/35
	CLXIV	3 x 149/35		VIII	3 x 75/27, 2 x 149/35
207 Div	XXXV	1 x 75/27, 2 x 105/27, 1 x 105/28		XV	2 x 75/27, 2 x 105/27, 2 x 149/35, 1 x 240/27
	CLX	3 x 149/35	220 Div	CVIII	1 x 76/40, 1 x 105/27, 1 x 105/32, 1 x 149/35
208 Div	XIX	2 x 75/27, 2 x 105/28, 1 x 149/35		CXXII	1 x 75/27, 1 x 105/27, 1 x 155/29
	XLI	1 x 105/28, 2 x 152/45		CLXXXIII	1 x 75/27, 1 x 105/27, 1 x 105/28
	CXXXIV	2 x 105/15			Liguria
213 Div	XXX	1 x 75/27, 1 x 105/14, 2 x 149/35	102 Regt	V	2 x 105/28
	CXXII	2 x 305/17	"Genova"	CI	2 x 152/45
		Sardinia		CV	2 x 75/27, 1 x 105/28, 2 x 194/29, 1 x 381/40
IV Bde	CXV	2 x 75/27, 1 x 149/12		CVI	1 x 152/45, 1 x 240/27, 1 x 381/40
"Oristano"	XXIII	1 x 75/27	201 Div	VI	1 x 105/28, 1 x 149/35
	XXIV	1 x 105/27, 1 x 152/45		XI	3 x 149/35
	LVIII	1 x 75/27		XII	3 x 149/35
	CLXXX	1 x 75/27		CXXXII	2 x 105/15
203 Div	LIX	2 x 75/27, 1 x 105/28		CXXXV	1 x 105/14, 1 x 105/15
	LXXXII	1 x 75/13, 1 x 75/27			Western Greece
204 Div	XIII	2 x 75/27, 1 x 105/?	"Piemonte" Div	CIX	1 x 102/50, 2 x 203/45
	XXI	1 x 152/45			Southern Greece
	LXIII	1 x 105/32	"Cagliari" Div	CXXXVI	3 x 155/14
	LXXXIV	3 x 75/27, 1 x 149/12		CXXXVII	3 x 155/14
205 Div	XIV	4 x 75/27	"Piemonte" Div	XIII	3 x 105/28
	XVII	2 x 75/27	"Brennero" Div	XIV	3 x 149/35
	XVIII	1 x 75/13, 3 x 75/27			Aegean
	XXVIII	2 x 75/27, 1 x 149/12	Cos	XXX	4 x 75/27
	XXXI	1 x 149/28, 1 x 149/35	Rhodes	XXXII	3 x 75/27
	XXXII	2 x 149/35		XXXIII	3 x 105/28
	XCIII	1 x 75/27, 1 x 149/35		XXXIV	4 x 75/27
		Southern Mainland		XXXV	3 x 149/12
16 Regt	XCVIII	2 x 100/23, 2 x 155/25		XXXVI	3 x 75/27
"Napoli"	CVII	1 x 90/53, 1 x 152/45, 1 x 155/34		XXXVII	3 x 210/8
	CXLVII	1 x 75/27, 1 x 305/17		XXXIX	3 x 105/28
	CXLVIII	2 x 149/35, 2 x 305/17		XL	3 x 75/27
209 Div	LXXXIX	1 x 75/27, 1 x 88/53, 1 x 149/35		XLI	3 x 149/12
	CXLIX	1 x 85/33, 1 x 102/40, 1 x 149/35	Crete	LXXVII	2 x 75/27
	CXCVI	1 x 75/27, 1 x 149/35, 1 s 152/60		LIII	2 x 75/27
	CXCVII	1 x 149/35, 2 x 152/37		LVII	2 x 75/27
210 Div	XXXVI	1 x 75/27, 2 x ?		?	2 x 105/28
	LIV	2 x 75/27, 1 x 149/35			
	XCV	2 x 75/27, 1 x 149/35, 1 x 152/13			
211 Div	CXII	1 x 75/27, 1 x 155/14			
	CXIII	3 x 75/27, 1 x 149/35			
	LVII	5 x 75/27, 2 x 149/35			
	LXXX	1 x 75/27			
	LXXXIX	1 x 75/27, 1 x 149/35			
212 Div	IX	1 x 75/27, 1 x 155/14			
	XI	3 x 75/27, 2 x 149/35, 2 x 155/14			
214 Div	LXXXI	3 x 75/27, 1 x 149/35			
	CXL	1 x 75/27, 1 x 105/14, 1 x 149/35			
222 Div	LIX	2 x 105/28			
227 Div	CXLIII	1 x 75/27, 1 x 105/?, 1 x 155/14			
	CLXXV	2 x 152/13, 1 x 194/29			

Identified Army/Milmart Coast Artillery Units, 1943

based optical rangefinders, but no additional range-finding equipment was authorized, which must have severely limited the accuracy of fire. A searchlight platoon with 75cm, 90cm, or 120cm lights, was sometimes attached to a coastal battery.

The battalion and regimental HQs contained no rangefinding gear either, nor were they authorized radios, although provision was made in their TO&Es for two men per radio once these became available. Nowhere in the coastal artillery organization were there ammunition handling teams, nor anti-aircraft units, significant range-finding elements, or modern communications.

Army coastal batteries, although sometimes independent, were usually grouped in small numbers into coastal artillery battalions. These were then usually formed into coastal artillery regiments under coastal divisions or brigades, although some were held under army harbor commands (*Piazzì M.M.*) and some were subordinated to the navy's harbor defense units. There were ten such army harbor commands in Italy: Augusta-Siracusa, Porto N (Palermo), Messina-Reggio, and Trapani in Sicily; La Maddalena in Sardinia; La Spezia on the west coast; Taranto on the southern coast; Brindisi and Venezia on the east coast; and Pola on the tip of Istrian Peninsula.

Although the wartime expansion of the army coastal artillery had taken place in its artillery branch, rather than the original Militia MILMART organization, MILMART units remained in place. An example was Sicily, where were located the 2nd Independent MILMART Battalion (two batteries each four 102/50 and one battery with three 152/50), the 3rd Independent MILMART Battalion (one battery with four 120/50 and three batteries each four 76/40), and the 6th MILMART Legion. This latter unit, defending the straits of Messina, had six heavy coastal batteries (two with four 120/50 each, two with three 152/45 each, and two with six 280/9 each), seven anti-aircraft batteries (each four 76/40), and nine dual-purpose coastal/AA batteries (five with four 76/40 each, three with four 90/42 each, and one with six 90/53).

The navy also contributed significant coastal defense assets. This service

	Batteries												Guns											
	76/40	100/47	120/45	120/40	149/37	150/40	152/40	152/45	152/50	156/47	190/39	190/45	203/45	203/50	280/9	305/42	306/17	381/40						
Italy																								
Agusta-Siracusa										4					1									
Brindisi							1	2								2								
Cagliari								3																
Elba-Piombino																								
La Maddalena								3	2				1			2								
La Spezia								2	3							2								
Messina								2	1						4									
Palermo										1														
Cherso Lussino											*1													
Pantelleria	1							3				**1	*1											
Pola		*1						1																
Taranto								2	2							1								
Trapani										3			*1											
Venezia								2	1							3								
Napoli	1									1		1					1							
Genova										1														
Gaeta																								
Salerno																								
Gallipoli																								
Ancona										1														
Porto Empedocle																								
Licata																								
Capo Granitola																								
Lampedusa																								
Sardinia	1							1																
Overseas																								
Leros	2																							
Rhodes								2	1															
Stampalia	1							3		1														
Patmo								1																
Sebenico																								
Teodo-Cattaro																								
Navarino																								
Crete																								
Laeroma (Dalmatia)																								
C Platomone (Dalmatia)																								
Argostoli																								
Other																								
Floating Batteries																								
* not mobilized																								
** under construction																								

Naval Coast Defense Assets, 12 February 1943

controlled a number of harbor defense units, or *Comandi di Difesa dei Porti*, with large numbers of coast defense and dual-purpose anti-boat/anti-aircraft batteries. These harbor defense commands fell into two groups: the first, larger, type of commands comprised "Genova", "Livorno", "Napoli", "Bari", "Trieste", "Catania", and "Palermo"; while the second, smaller, type comprised "Ancona", "Civitavecchia", "Fiume", "Olbia", Ajaccio" and "Bastia".

Although the naval artillery was expanded, this was for the most part offset by continual losses in the colonies and, later, Sicily. The number of guns held by naval coast defense at representative dates was as follows:

	10 Jun 40	1 Jan 42	1 Aug 43
Coast Defense Guns			
381mm	10	10	11
305mm	25	24	3
254mm & 280mm	52	48	8
190mm & 203mm	30	28	8
149mm & 152mm	264	275	237
135mm	0	0	24
120mm	214	202	126
Anti-Boat & Anti-Air Guns			
102mm	242	264	140
100mm	14	39	65
90mm 32	88	337	
76mm 947	901	622	
65mm 24	55	20	
47mm 0	26	0	

These guns were organized into naval coastal batteries of variable composition. Unlike army coastal batteries navy units often incorporated their own light AA elements in the form of 13.2mm heavy machine guns and 20mm, 37mm, and 40mm autocannon. In addition, some batteries were dual-purpose units with main armament capable of both anti-ship and anti-aircraft fire. An example of an integrated naval coast defense effort can be seen in the forces allocated to the defense of Tobruk in late 1940:

Dandolo Battery	(2 LMG, 2 HMG, 4 20mm AA, 5 149/47)
Bellotti Battery	(2 LMG, 2 20mm AA, 4 149/47)
Grasso Battery	(2 LMG, 2 HMG, 2 20mm AA, 4 149/47)
Tortora Battery	(2 LMG, 2 20mm AA, 2 37/54 AA, 6 102/35 AA)

Bejad Battery	(6 LMG, 1 20mm AA, 6 102/35 AA)
Pilastrino Battery	(2 LMG, 1 20mm AA, 6 102/35 AA)
Sidi-Mahmud Battery	(2 LMG, 2 HMG, 1 20mm AA, 6 102/35 AA)
Tordo Battery	(2 LMG, 1 20mm AA, 2 37/54 AA, 6 76/40 AA)
Toro Battery	(1 20mm AA, 6 76/40 AA)
Topo Battery	(2 LMG, 2 HMG, 1 20mm AA, 2 37/54 AA, 6 76/40 AA)
Tonno Battery	(1 LMG, 2 20mm AA, 1 40/39 AA, 6 76/40)

The internal organization of the naval batteries is not known, although they almost certainly included the more complex range-finding equipment that their army counterparts lacked.

Artillery Trains

Similar in function to the coastal artillery were the artillery trains (*treni armati*) raised by the Navy for roving coastal defense. The naval artillery trains were ordered mobilized in April 1939 for service under the naval coastal artillery force (*Maristat*) starting in June. The Navy had twelve such trains based at two depots, one in Taranto and the other in Spezia. The trains were given designations derived from (1) TA = *treni armati*, (2) the size of the main weapon carried by the train, (3) a sequence number, and (4) their depot base. The trains raised were thus:

Spezia Base:

TA 120/1/S	four 120/45 guns and two 13.2mm MG
TA 120/2/S	four 120/45 guns and two 13.2mm MG
TA 120/3/S	four 120/45 guns and two 13.2mm MG
TA 120/4/S	four 120/45 guns and two 13.2mm MG
TA 152/5/S	five 152/40 guns and two 13.2mm MG
TA 76/1/S	six 76/40 AA guns and two 13.2mm MG

Taranto Base:

TA 152/1/T	four 152/40 guns, two 76/40 AA guns, and two 13.2mm MG
TA 152/2/T	four 152/40 guns, two 76/40 AA guns, and two 13.2mm MG
TA 152/3/T	four 152/40 guns, two 76/40 AA guns, and two 13.2mm MG
TA 152/4/T	four 152/40 guns, two 76/40 AA guns, and two 13.2mm MG
TA 102/1/T	four 102/35 AA guns and two 13.2mm MG
TA 76/1/T	four 76/40 AA guns and two 13.2mm MG

These trains were deployed to Liguria and Sicily until the fall of France when they were deployed more widely. In 1941 Maristat ordered a reconfiguration of the Taranto group to improve its low-level air defense capabilities. The 76mm AA guns were removed from the 152mm trains and replaced by 20mm Isotta Fraschini automatic cannon, and the 76mm guns thus made surplus were used to form two new anti-aircraft trains, TA 76/2/T and TA 76/3/T. These, however, were the only new artillery trains activated during the war.

To command these trains in the field two train group HQs were formed in August 1939, *Marimobil Genova* and *Marimobil Palermo* (later *Messina*). By the end of 1941 the Genoa group controlled only four trains: TA 76/1/S, TA 120/2/S, TA 152/4/T and TA 152/5/S, all the others serving in Sicily under the Palermo group where they remained until destroyed in the Allied invasion.

The composition of the artillery trains varied according to type, but probably typical was that of a 152mm train, which consisted of two locomotives (one each end), four gun wagons for the 152mm weapons, two AA wagons for the 20mm weapons, a command car for fire direction and signal duties, two ammunition cars, a powder car, an office car, two barracks cars, a kitchen car, a baggage car and an equipment car. Such a train had a crew of 3 officers, 25 NCOs, and 101 other ranks, exclusive of the railroad personnel assigned.

Frontier Guard Artillery

Yet another artillery force was operated by the *GaF*, or *Guardia alla Frontiera*. The *GaF* was for the most part static, sited to provide fire support to infantry defending the border, although the army sometimes assigned motor transport to the lighter units to use them as field elements. The largest concentrations were found on the Italian borders with France, Austria/Germany, and Yugoslavia, and the Libyan border with Tunisia, although *GaF* artillery units were found in small numbers elsewhere as well.

Along the Libyan/Tunisian border the *GaF* deployed no fewer than five artillery regiments and three separate battalions organized as follows:

38th Artillery Regiment

- Two battalions (CCLXXXII & CCLXXXIII) @ 3 batteries 75/27 guns
- Two battalions (VII & CCLXXXIV) @ 2 batteries 75/27 guns
- One battalion (VI) @ 2 batteries 149/12 howitzers

290th Artillery Regiment

- Three battalions (CCXCI, CCXCII, CCXCIII) @ 2 batteries 77/28 guns

330th Artillery Regiment

- Two battalions (CCCXXXIV & CCCXLII) @ 2 batteries 77/28 guns
- One battalion (CCCXXXIII) @ 3 batteries 149/35 guns
- One battalion (CCCXXXII) @ 1 bty 77/28, 1 bty 149/12 & 1 bty 210/8

340th Artillery Regiment

- One battalion (CCCXLIII) @ 2 batteries 77/28 guns
- One battalion (CCCXLIV) @ 3 batteries 77/28 guns
- One battalion (CCCXXXV) @ 3 batteries 149/12 howitzers
- One battalion (V) @ 2 batteries 105/28 guns

350th Artillery Regiment

- One battalion (CCCLI) @ 2 batteries 77/28 guns
- One battalion (CCCXLV) @ 2 batteries 120/25 guns
- One battalion (CCCXLI) @ 2 batteries 149/35 guns
- One battalion (I) @ 2 bty 120/25 guns & 1 bty 100/17 how

- Two battalions (CCLXXXI & CCCLII) @ 2 batteries 77/28 guns
- One battalion (VII/35) @ 1 bty 75/27, 5 bty 77/28, 1 bty 149/12

For the eastern (Egyptian) border of Libya the *GaF* contributed three artillery regiments and no separate battalions.

An example of homeland GaF forces was the element facing Yugoslavia in the spring of 1941. The southern half of the border was covered by the 10th GaF Artillery Regiment, while the northern half was supported by the 17th Regiment and one battalion of the 9th Regiment. These elements were formed as follows:

9th Artillery Regiment

One battalion (XLII) @ 1 bty 65/17 howitzers, 3 bty 27/27 guns, 1 bty 100/17 howitzers

10th Artillery Regiment

Two battalions (LXXXII & LXXXIV) @ 2 bty 75/27 guns & 1 bty 100/17 howitzers

One battalion (LXVII) @ 2 batteries 100/17 howitzers

One battalion (LIII) @ 2 batteries 149/12 howitzers

Two battalions (LXXXI & LXIX) @ 2 batteries 149/35 guns

One battalion (LXXXIII) @ 3 bty 75/27 guns, 1 bty 149/12 howitzers, 1 bty 240/12 howitzers,
1 bty 260/9 howitzers

17th Artillery Regiment

One battalion (LXXIV) @ 1 battery 75/27 guns

One battalion (L) @ 2 batteries 75/27 guns

One battalion (LX) @ 2 bty 75/27 guns & 1 bty 100/17 howitzers

Three battalions (LXII, LXIV & LXVI) @ 2 batteries 100/17 howitzers

Three battalions (IL, LI & LXI) @ 3 batteries 100/17 howitzers

One battalion (LII) @ 2 batteries 149/12 howitzers

One battalion (LVIII) @ 2 batteries 149/35 guns

One battalion (LXI**ibis**) @ 2 batteries 152/45 guns

One battalion (LXV) @ 2 bty 75/27 guns, 1 bty 149/12 howitzers, 1 bty 210/8 howitzers

One battalion (LVI) @ 2 bty 152/45 guns & 1 bty 149/35 guns

By mid-1941 France and Yugoslavia had fallen, Austria had been incorporated into Germany, and Switzerland posed no threat. As a result the GaF artillery began a migration to the more threatened south. On 30 January SMRE ordered a large-scale stripping of the assets of 4th Army GaF artillery on the French border, sending to Sicily four 2-battery battalions of 100/17 (LXX, LXXIX, XC and LXIII, each with 15 officers and 240 enlisted), one 2-battery battalion of 75/27 (LXXVI, also with 15 officers and 240 enlisted), five separate batteries of 75/27 (each 4 officers and 95 enlisted), and four separate batteries of 100/17 (also 4 + 95); to Calabria one 2-battery battalion of 75/27 (LV) and three separate 75/27 batteries; to Puglie a 2-battery battalion of 75/27 (XCIX), a one-battery battalion of 100/17 (XXXVII), and six separate batteries - one of 75/27, two of 100/17, and three of 105/14; while Sardinia received a 2-battery battalion of 100/17 (XXXVIII), a one-battery battalion of

100/17 (XLI), a mixed battalion (XCVIII, with one 75/27 battery and one 105/14 battery), two independent 75/27 batteries, six 100/17 batteries, and one 105/14 battery. Once in place, usually in coastal defense roles, the batteries and battalions often dropped the "GaF" from their designations.

These and earlier transfers severely cut the strength of the GaF artillery on the northern borders. Thus, by the spring of 1942 the I Corps zone artillery had been reduced to a single battery in the VI Sector, the XXXIV Battalion (with four batteries of 75/27 and one of 149/35) in the VII Sector, the LIV Battalion in the VIII sector, the LXXVII Battalion in the IX Sector, and two batteries in the X Sector.

In addition, at least two GaF battalions were withdrawn from the Alps and converted to 88mm static AA battalions, the XLIV Battalion (with batteries 82, 83, and 327) and the C Battalion (with batteries 47, 48 and 49), which became, respectively, the XXVII and CX anti-aircraft battalions.

Lest SMRE be accused of consistency, however, it abruptly changed course in mid-1942. On 27 May it authorized the activation of two batteries equipped with ex-French 105/15 howitzers. Larger activations followed shortly, for on 8 June it authorized the activation of four battalion HQs and ten batteries with old 152/13 howitzers drawn from storage depots to reinforce the 4th Army on the French border, followed on 18 June by ten batteries with 105/15, three with 105/11, and three with 155/14, all ex-French weapons.

Thus, by July 1942 the GaF artillery force facing Italian-occupied France comprised the following elements:

- I Corps Artillery (19th GaF Artillery Regiment)
 - XLVI Battalion (1 bty 152/45 & 1 bty 380/15)
 - XLIII Battalion (2 bty 149/35)
 - LXII Battalion (2 bty 152/13 & 2 bty 105/15)
 - LXXV Battalion (3 bty 105/15)
 - XXXIV Battalion (4 bty 75/27 & 1 bty 149/35)
 - LIV Battalion (3 bty 75/27, 1 bty 120/21, 1 bty 149/35)
 - LXXVII Battalion (5 bty 75/27)
 - LXVIII Battalion (2 bty 149/35)
 - LXXII Battalion (1 bty 75/27, 1 bty 149/35)

XV Corps Artillery (11th GaF Artillery Regiment)
LXIII Battalion (3 bty 152/13)
XXIX Battalion (3 bty 149/35)
LXXX Battalion (2 bty 149/35)
LXI Battalion (3 bty 152/13)
XLII Battalion (3 bty 105/11)
LVII Battalion (3 bty 155/14)
XLVIII Battalion (3 bty 75/27)
LXXIII Battalion (2 bty 75/27)
XXII Corps (7th GaF Artillery Regiment)
LXXI Battalion (3 bty 105/15)
XCVI Battalion (2 bty 105/15, 2 bty 149/35, 1 bty 420/12)
LIX Battalion (3 bty 149/35, 1 bty 305/17, 1 bty 381/15)
XLVII Battalion (2 bty 105/15, 1 bty 149/35)
LXVIII Battalion (2 bty 152/13)

Although the weapons were for the most part fairly elderly this was still an impressive amount of firepower to concentrate on a thoroughly secure border. Presumably, the high command was concerned about a possible Allied invasion of southern France with a subsequent swing through the Alps into northern Italy, however, this was still to be two years away.

Similarly, the GaF artillery in western Libya, lacking the mobility to tactically deploy for the great battles to the east, survived in large part until late 1942. Indeed, new units were formed by the GaF depots in Tripoli during 1942, presumably out of personnel released elsewhere. Thus, on 24 April the 355th GaF Battalion (one battery of 75/27 and one of 77/28) and the 356th GaF Battalion (two batteries of 77/28) were formed *de novo*, while the former IV Battalion of the Savona's 12th Artillery Regiment was redesignated the 357th GaF Battalion with three batteries of 75/27.

Thus, when the Italians, in a turn of irony, attempted to hold the former French Mareth line in Tunisia against enemies advancing from Libya much of the artillery support was from GaF units that had previously aimed their guns at the Mareth Line, namely:

292nd GaF Artillery Battalion (2 batteries 77/28)
293rd GaF Artillery Battalion (2 batteries 77/28)
331st GaF Artillery Battalion (3 batteries 77/28)
332nd GaF Artillery Battalion (3 batteries 75/27)
333rd GaF Artillery Battalion (2 batteries 75/27)

334th GaF Artillery Battalion (2 batteries 77/28)
335th GaF Artillery Battalion (3 batteries 149/12)
336th GaF Artillery Battalion (2 batteries 77/28)
343rd GaF Artillery Battalion (2 batteries 105/28)
357th GaF Artillery Battalion (2 batteries 75/27)

Leland Ness