

Office of the Commander-in-Chief
HEADQUARTERS MEDITERRANEAN ALLIED AIR FORCES
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SUBJECT: Air Power in the Mediterranean.

TO : Group and Wing Commanders,
Mediterranean Allied Air Forces.

1. At the suggestion of the Assistant Chief of Staff Intelligence, Headquarters, Army Air Forces this series of brief studies covering the history and the principal tasks of "Air Power in the Mediterranean" has been prepared by the Historical Section, Headquarters, M.A.A.F.

2. Originally these papers were to be used as a convenient and quick reference on M.A.A.F. -- to acquaint interested persons, such as student officers and instructors at A.A.F. training establishments, with some of the commitments of our units and how these have been discharged. Included also was a statement on the enemy.

3. When I read the completed studies it occurred to me that they might be of interest to Group and Wing Commanders. This folder has therefore been reproduced for your use.

4. M.A.A.F. today is an organization of over a quarter million officers and men, wearing several uniforms, flying thirty types of aircraft, widely scattered geographically and engaged in a variety of tasks. I believe all of us will benefit by keeping an over-all perspective of the past achievements and present assignments of this great aggregation of air power.

5. The inclosed material is unclassified.



IRA C. EAKER
Lieutenant General, U.S.A.
Commanding

CONDENSED SUMMARY OF AIR FORCES ACTIVITY
IN THE MEDITERRANEAN THEATRE

The successive achievements of the Air Forces in this Theatre which are listed below combine to illustrate the following three outstanding features in their operations:

- a. They have carried on, practically simultaneously, the widest variety of combat air activities, - including six major amphibious operations, strategic bombing, ground support, interdiction of enemy communications, convoy protection, rear defense and supply dropping to Partisan formations.
- b. Through their thoroughness and enterprise they have innovated and established methods particularly in the field of tactical operations which have been of value in all our Theatres of War.
- c. They have maintained a combined Allied command, the success of the operations having reflected the harmony of the combined direction and the efficiency which has resulted by reason of an assignment of aircraft by function rather than by nationality.

A selection of the more significant achievements of these Air Forces would include:

- a. The establishment of air superiority in North Africa in February, 1943.
- b. The interdiction of German supply lines to Tunisia.
- c. The close support accorded to our armies during the last phase of the North African campaign.
- d. The reduction of Pantelleria.
- e. The destruction of enemy air forces in Sicily.
- f. The reduction of enemy air opposition to our landings at Salerno, Anzio and in Southern France. On the first two occasions, in addition, soon after the landings, a major crisis was turned in our favor by a mass air attack against enemy concentration.
- g. The offensive against the Ploesti oilfields.
- h. Participation with the 8th Air Force in destroying the German airplane industry.
- i. Operation "Strangle", - the systematic cutting of enemy lines of communication, an operation which played a large part in winning the battle of Rome, and the advance into Umbria and Tuscany.
- j. A large role in convoy defense and the anti-submarine war in the Mediterranean.
- k. A programme of supply dropping to the Partisan formations in Yugoslavia, France, Northern Italy and Poland, and cooperation with the Russian forces in SE Europe.

For a more detailed account of these activities see Appendices as listed on the next page.

INDEX OF ANNEXES

	<u>Page</u>
Present Tasks and Evolution of Allied Air Power in the Mediterranean	7
Effect of Strategic Bombardment on the Present Status of the War, a state- ment for the Press by Lt. General Ira C. Eaker, 2 February 1945	21
The Reduction of Enemy Air Opposition	29
MAAF Attack on the Axis Oil Industry	37
"Airlock in Italy", an analysis of Tactical Air Doctrine, by Brigadier General Lauris Norstad	47
Combined Air Command in the Mediterranean	57
Casualties, Morale and the Combat Tour	61
What the Germans Are Saying	67



**tasks and
evolution**

THE PRESENT TASKS AND THE EVOLUTION
OF
ALLIED AIR POWER IN THE MEDITERRANEAN

The Mediterranean Allied Air Forces have four primary tasks. The first, with the Strategic Air Force, is to bring maximum pressure on German industry. The second is to support, with the Tactical Air Force, the land armies in battle. The third is to assist in keeping the sea lanes of communication open, protecting our shipping, our harbors and our rear establishments from enemy air action. The fourth major task is to supply the maximum cooperation to the Partisans in the Balkans.

The organization of the Mediterranean Allied Air Forces is designed to provide a major unit for the performance of each of these primary tasks. The Strategic Air Force, composed of the U.S. Fifteenth Air Force and the British 205 Group, is organized primarily for the accomplishment of the first task. Its long-range bombers aim at the destruction of German industry, with particular emphasis at present on oil production and stores. The Tactical Air Force, composed of the American Twelfth Air Force and the British Desert Air Force, supports the Eighth and Fifth Armies in their land campaigns. The bombers of the Tactical Air Force now have as their primary objective the destruction of German communications in the Po Valley and Brenner Pass. The Coastal Air Force is organized to protect our shipping lanes from enemy air attacks and to locate and destroy enemy submarines and shipping. It is also charged with the defense of our harbors and rear echelons, supply depots and establishments. And the Balkan Air Force is primarily charged with the operations in support of the Partisans.

For the accomplishment of these tasks, MAAF now disposes, and has disposed since April 1944 when it reached full strength, some 13,000 airplanes and some 300,000 officers and men, of which slightly more than half are American and the rest British. During 1944 this great aggregation of striking power played a major role in the conduct of the European war and brought to full fruition the development of air power which began with the victories of El Alamein and the invasion of North Africa in the Fall of 1942.

Air Power's contribution to our progress since then can be summarized statistically -- 545,000 tons of bombs dropped, 8,723 enemy aircraft shot down. It can be summarized by the long list of victories won - Tunisia, Pantelleria, Ploesti, and so on. But over and above the bombs dropped and the battles won in the past two years, the Allied Air Forces in the Mediterranean have made two great contributions to the Allied cause everywhere. For the Mediterranean Theatre has been the primary crucible for the development of tactical air power and the evolution of joint command between Allies.

Ever since El Alamein the Mediterranean has been a laboratory for tactical air forces, just as England has been the primary testing ground of strategic air forces. Each succeeding battle in the long march across Africa through Tunis to Sicily, Italy and Southern France witnessed further improvements in the tactical employment of air power. The joint U.S. and British Tactical Air Force in the Mediterranean has the longest experience of any of our air forces in the art of supporting ground advances by air action. Its recent operations, especially in the Battle for Rome, have been recognized as masterpieces of that art and a model for air support procedure in all war theaters.

Similarly the Mediterranean has been our first and most complete laboratory in developing efficient joint management, not only between British and Americans but with the French, Yugoslavs, and other Allies. There is no better example of how the many diverse elements in the Mediterranean have been welded into an integrated whole than the evolution of air command in Africa and Italy. In England the American and British air forces have, until recently, operated almost entirely on national lines. In the Mediterranean, however, for nearly two years the British and American air forces have been merged in a unified chain of command of which the organization of Mediterranean Allied Air Forces at the beginning of 1944 was the ultimate development. The lessons thus learned in management and cooperation between Allies have been a major contribution to our efficiency in the joint prosecution of the war everywhere.

Growth

The history of the air forces in the Mediterranean falls naturally into three phases. The first phase, which extended until February 1943, began with the Desert Air Force at El Alamein and the embryo Twelfth Air Force at Casablanca and ended with both of them converging on Tunisia. The second phase covers the career of the Northwest African Air Force and the Mediterranean Air Command from February 1943 until December 1943. These two organizations represented the first assembling of the various Allied air forces under one management. Under Air Chief Marshal Tedder and General Spaatz they conducted the Tunisian campaign, the invasion of Sicily and the conquest of Southern Italy as far north as Cassino. The third and final phase dates from the creation of Mediterranean Allied Air Forces in December 1943 until the present. This period has seen the battle line advance from Cassino to Bologna, the conquest of the Balkans and of France, the tremendous battle of Ploesti and the clearing of the enemy from almost the whole Mediterranean.

At the time of the landing in North Africa the Twelfth Air Force consisted of only 551 aircraft. By February, when the Desert Air Force was linked with it in the Northwest African Air Forces, the Twelfth had grown to 1,038 planes. The first great achievement of the Northwest African Air Forces was the establishment of complete air superiority in Africa. The second was the interdiction of German supply lines to Tunisia by bombing ports, sinking ships and shooting down the aerial

convoys which were the Germans' desperate last resort. The elimination of German air power and the cutting of German supply lines were two of the major reasons for the complete collapse of the German armies in Tunisia. A third contribution of Allied air power to that great victory was the intense close support of our troops in the final break-through. Here the newly formed Tactical Air Force brought to a new peak of proficiency the tactics learned by the Desert Air Force since El Alamein and the Twelfth Air Force since Casablanca. All told in the North African campaign the air forces dropped 11,708 tons of bombs, shot down 1,304 Axis aircraft and sank 76 Axis ships. Our own losses, both British and American, were 651.

Next came Pantelleria, history's first example of territorial conquest by air action. Between 30 May and 11 June our planes flew 5,252 sorties and dropped 6,313 tons on this hapless island, whose capitulation provided the advance fighter base needed to invade Sicily.

The Allied Air Forces' indispensable contribution to the conquest of Sicily between 10 July and 17 August 1943 was the destruction of the Axis air forces concentrated there. Between July first and D-day 2,925 sorties were directed against enemy airfields, wiping out several hundred Axis planes on the ground. The measure of the success of this counter air offensive is the fact that the Sicilian invasion took place with only token opposition from the Luftwaffe. The same pattern was repeated in the Southern Italy invasion. The spectacular strafing of the 200 JU-88's concentrated at Foggia enabled the Salerno beachhead to be established without air opposition. And when the Salerno battle was at its crisis the air forces for two days in succession mustered more than 1,000 sorties, effectively halting the German counter-attack. Nowadays, 1,000 sorties is an ordinary day's work. But in September 1943 it was a new achievement to put that many aircraft over a distant beachhead.

At the end of the Tunisian campaign the Allied air forces totalled 2,630 American airplanes, 1,076 British and 94 French, making a total of 6,430. By the time southern Italy had been conquered in the Fall of 1943 the Northwest African Air Force had increased to a total of 7,509 aircraft and a new element had appeared on the scene of the Fifteenth Air Force, which was created November 1, 1943 out of XII Bomber Command in order to take advantage of the strategic bombardment possibilities which had become available to us through the capture of the Foggia airfields. With the movement of the war entirely away from North Africa, it was obviously time to reorganize the air structure. Accordingly, in early December all the air forces in the Mediterranean and including R.A.F. Middle East were merged into the Mediterranean Allied Air Forces. This brought Allied air power in the Mediterranean to its final organizational form and was followed within a few months by the achievement of its full strength in airplanes. The great build-up was in heavy bombers and came in the Spring of 1944 when fifteen U.S. groups poured into the Fifteenth Air Force in the space of two and a half months. By the first week of April, therefore, when the Strategic Air Force began its great offensive against Ploesti, MAAF's strength had reached the tremendous

total of 13,974 aircraft and 273 gliders. Much of this comprised non-operational aircraft (four thousand odd in R.A.F. Middle East, for example) but even so the total in tactical units was very large - 5,192.

The great build-up of the air forces is dramatically reflected in the statistics of the difficult amphibious assault at Anzio. Whereas the Allied air forces had put up 25,000 sorties in support of the invasion of Sicily and 29,000 in support of the Salerno landings, for Anzio the total came to 54,000. As at Sicily and Salerno, the air forces kept the beachhead at Anzio free of all but token enemy air opposition. And when the German counter-attack a month after the landing threatened to push the beachhead back into the sea the air forces again mustered every available plane to play a major role in stopping the German attack.

STRANGLE

Following the stalemate at Anzio and Cassino the Allied air forces in the Mediterranean were employed in the now famous STRANGLE operation whose purpose was to cut the German lines of supply down Italy until the German armies were so weakened logistically that they would be unable to withstand a major Allied assault. Between 15 March and 11 May, when the ground advance began, MAAF devoted 65,003 effective sorties and 33,104 tons of bombs to this enormous interdiction program. From 24 March onward its bridge-busting tactics resulted in the cutting of all rail lines south of Pisa. The desperate Germans tried barges down the coast and motor convoys down the roads. Air power shot both to bits. When the ground armies surged forward in early May the Germans no longer had the muscle to withstand them. While they fell back in disorganized rout, MAAF kept up its pressure on communications, concentrating on motor, of which Tactical Air Force destroyed 6,577. Between 12 May and 22 June MAAF flew another 72,946 sorties and dropped 51,500 tons of bombs. This scale of effort averages out to 1,352 effective sorties and 843 tons per day. Cost was 803 planes, or only .0058% of effective sorties. But perhaps the most revealing figure is the number of cuts maintained in rail lines. In May such cuts averaged 71 in existence each day.

With the battle for Rome won, MAAF turned its attention to the invasion of southern France. Here again air and ground formed a close partnership. The landings were achieved without air opposition from the enemy and with a minimum of resistance from German batteries on the shore, all of which had been neutralized by intensive aerial and naval bombardment. In the space between 10 August, when the preliminary bombing began, and 11 September, when the Seventh Army made contact with the Third, MAAF flew 23,808 sorties and dropped 14,030 tons of bombs in France.

FLOESTI

Operation STRANGLE and the invasion of Southern France were primarily the

responsibility of the Tactical Air Force, though the Strategic joined in on many an occasion. Strategic's main function, of course, was the prosecution of the bombing offensive against German war industry. Carefully integrated with the Eighth Air Force and RAF Bomber Command in England, its attacks have ranged from southern France through Germany, Poland, Czechoslovakia and the Balkans. Strategic's destruction of the Messerschmitt factories at Wiener Neustadt was a major contribution to the elimination of the Luftwaffe. Another Strategic milestone was the execution of the first shuttle mission to Russia. But undoubtedly the most significant achievement of the Mediterranean Allied Strategic Air Force was the battle of Ploesti - an epic in the history of air war.

Air operations against Ploesti started on 5 April 1944, eight months after the low-level attack by aircraft of the U.S. Eighth and Ninth Air Forces then operating from Middle East bases, and lasted until 19 August 1944. During this almost 5-month period, Fifteenth Air Force heavy bombers flew 6,186 sorties, dropped 13,469 tons of bombs, were escorted by 3,400 fighters.

Twenty daylight missions were flown over what was the third most heavily defended target on the continent (protected by 240 plus heavy guns). The 205 Group (RAF), which with the U.S. Fifteenth Air Force comprises the Mediterranean Allied Strategic Air Force, conducted four night attacks against Ploesti oil and contributed substantially to the overall success of the Ploesti campaign.

The largest single source of German oil, Rumania contained some 65% of all the crude oil production in German Europe. And 85% of Rumania's petroleum was processed at Ploesti, whose refineries in April 1944 were potentially capable of a throughput of 602,000 tons per month. Actual average monthly throughput at the time was 366,000 tons and the difference was excess capacity, or cushion, which had to be destroyed before refinery production could be effectively reduced.

With the beginning of the concerted offensive on 5 April production started to decline. From April to 23 August 1944, when the refineries shut down, an average of but 140,000 tons of crude oil were refined monthly, which was 38% of the January-March average. The total five months estimated reduction was 1,129,000 tons, a 62% loss to Germany. These figures are all taken from official refinery records captured at Ploesti after Rumania's surrender.

The loss of Ploesti oil at a time when all other major enemy oil production centers were being systematically liquidated day by day represents a major triumph in the history of strategic air warfare.

During the battle of Ploesti approximately 59,834 airmen attacked it. The German fighter and flak defenses were aggressive and skilled. Nevertheless personnel losses were kept to 4.1%, aggregating 2,432 men. A fitting climax to the

story of Ploesti was the rescue of 1,061 of these boys from Bucharest on 31 August and 1 and 3 September by Flying Fortresses which only 12 days earlier had taken part in the last Ploesti mission.

CONCLUSION

After the capture of Rome Field Marshal (then General) Sir Harold Alexander signaled the air forces: "Without you we could not have done it." The cold figures of Air Power's work in the Mediterranean are perhaps equally eloquent:

Effort:

1,033,184 effective sorties
545,000 tons of bombs

Claims:

8723 enemy aircraft destroyed
2205 " " probably destroyed
3409 " " damaged

Losses:

7888 planes

Enemy Transport Claimed:- 1 January 1944 to 1 February 1945:

16,817 Motor vehicles destroyed
15,179 " " damaged
7,465 Railroad cars destroyed
17,311 " " damaged
2,112 Locomotives destroyed
2,502 " damaged

Help for the Partisans:

10,000 tons of supplies dropped
16,000 personnel evacuated

Strategic Bombardment:- 1 January 1944 to 1 February 1945:

Aircraft factories - 14,000 tons bombs
Airfields - 25,000 " " (4525 planes destroyed)
Oil Refineries - 41,131 " "
Oil Stores - 7,555 " "
Misc. Industry - 13,899 " "

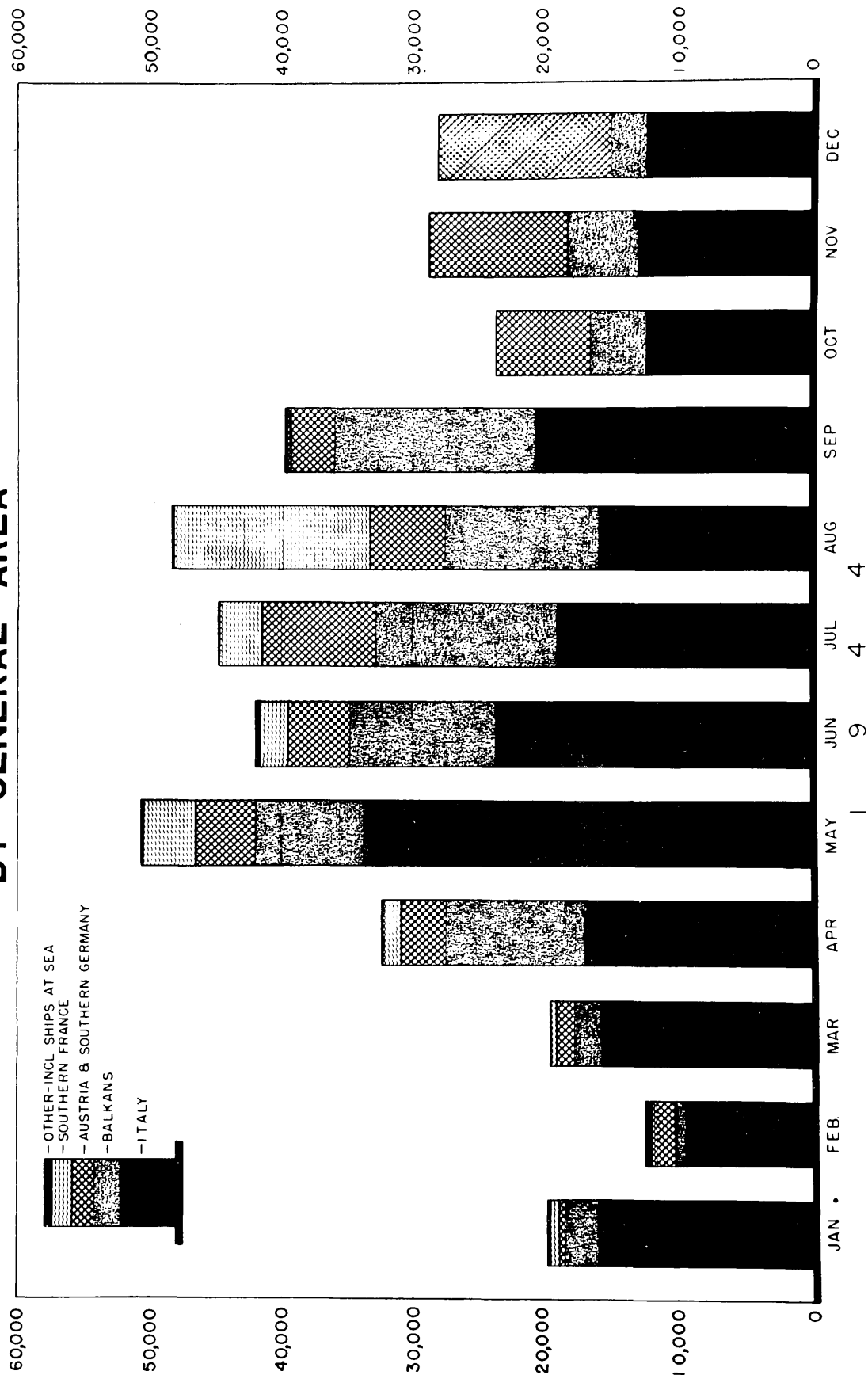
<u>Major Campaigns</u>	<u>Sorties</u>	<u>Tons</u>	<u>Claims</u>	<u>Losses</u>
North Africa 8 Nov 42 to 13 May 1943	34,974*	11,708	1,304	651
Pantelleria, 30 May to 11 June 1943	5,252	6,313	236	63
Sicily, 10 July to 17 Aug. 43	25,070	16,243	293	177
Southern Italy April 1943 to 20 Sept. 1943		277,654		
Salerno, 1 to 30 September	29,068	15,385	261	169
Anzio, 1 Jan to 15 Feb 44	54,060	25,272	468	234
Central Italy Preliminary Phase, 15 Mar to 11 May. "STRANGLE"	65,003	33,104	296	365
Central Italy 12 May to 22 June.	72,946	51,500	176	438
S. France 10 Aug. to 11 Sept 44	23,808	14,030	8	173

* USAAF figures only; RAF not available.

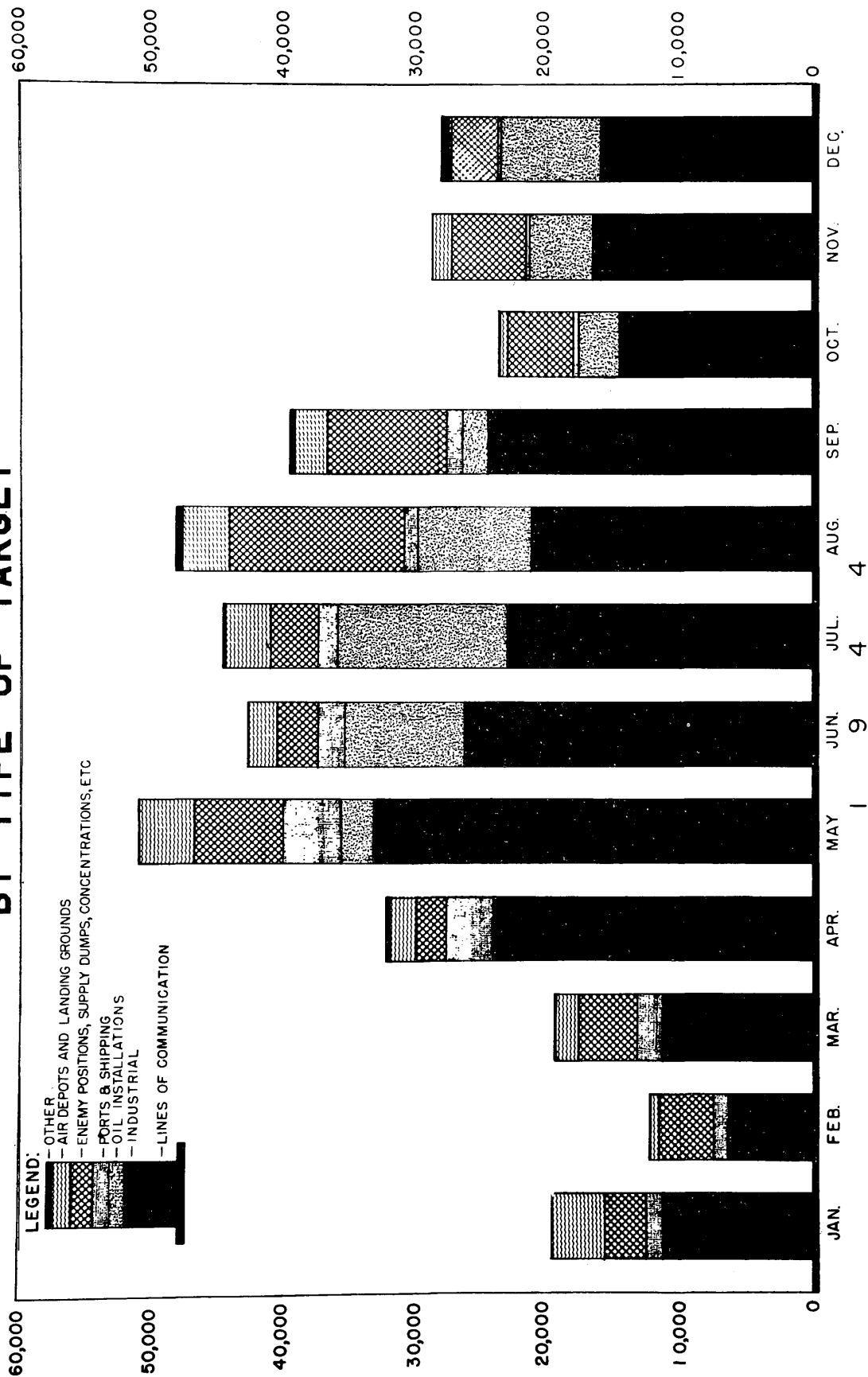
Prepared by:

Historian, Hq. MAAF.
18 February 1945.

MAAF MONTHLY BOMB TONNAGES DROPPED BY GENERAL AREA

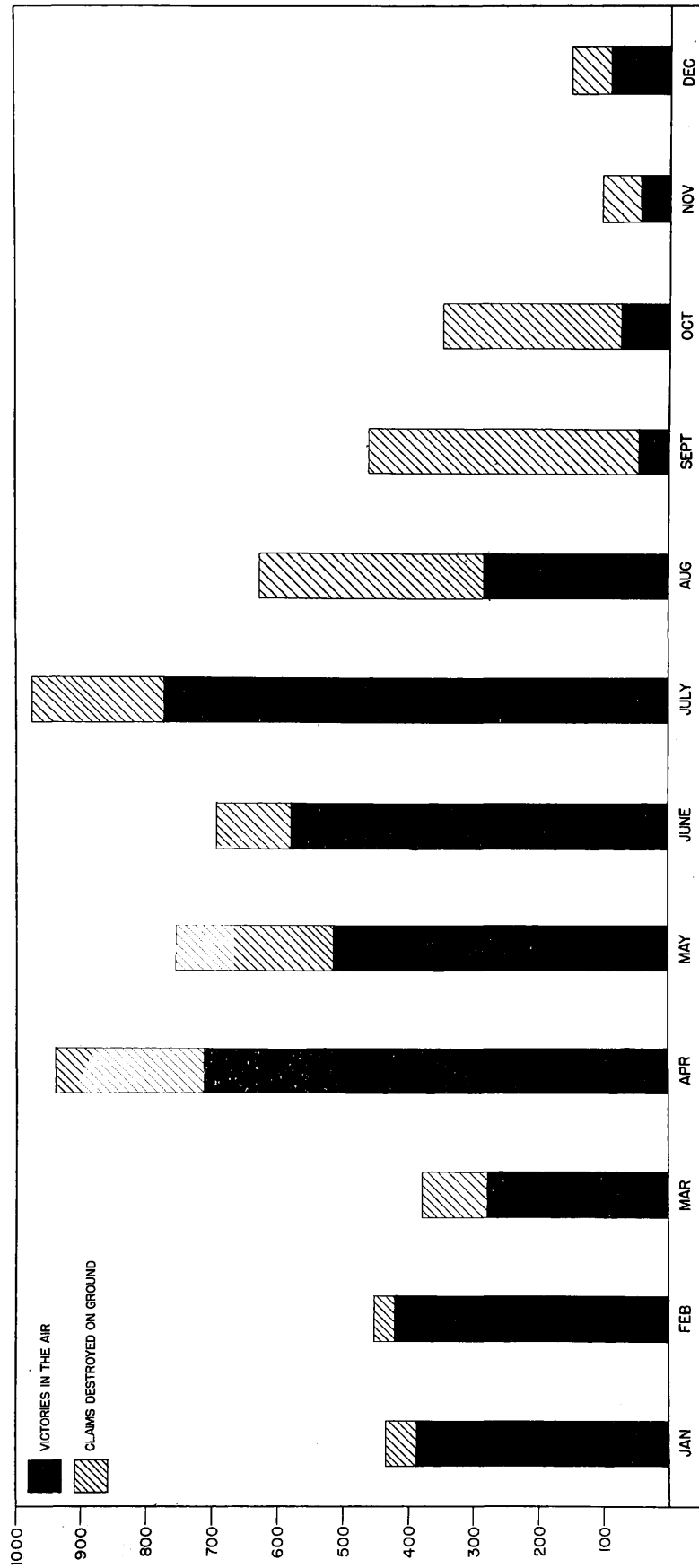


MAAF MONTHLY BOMB TONNAGES DROPPED BY TYPE OF TARGET



TOTAL MAAF VICTORIES

1944

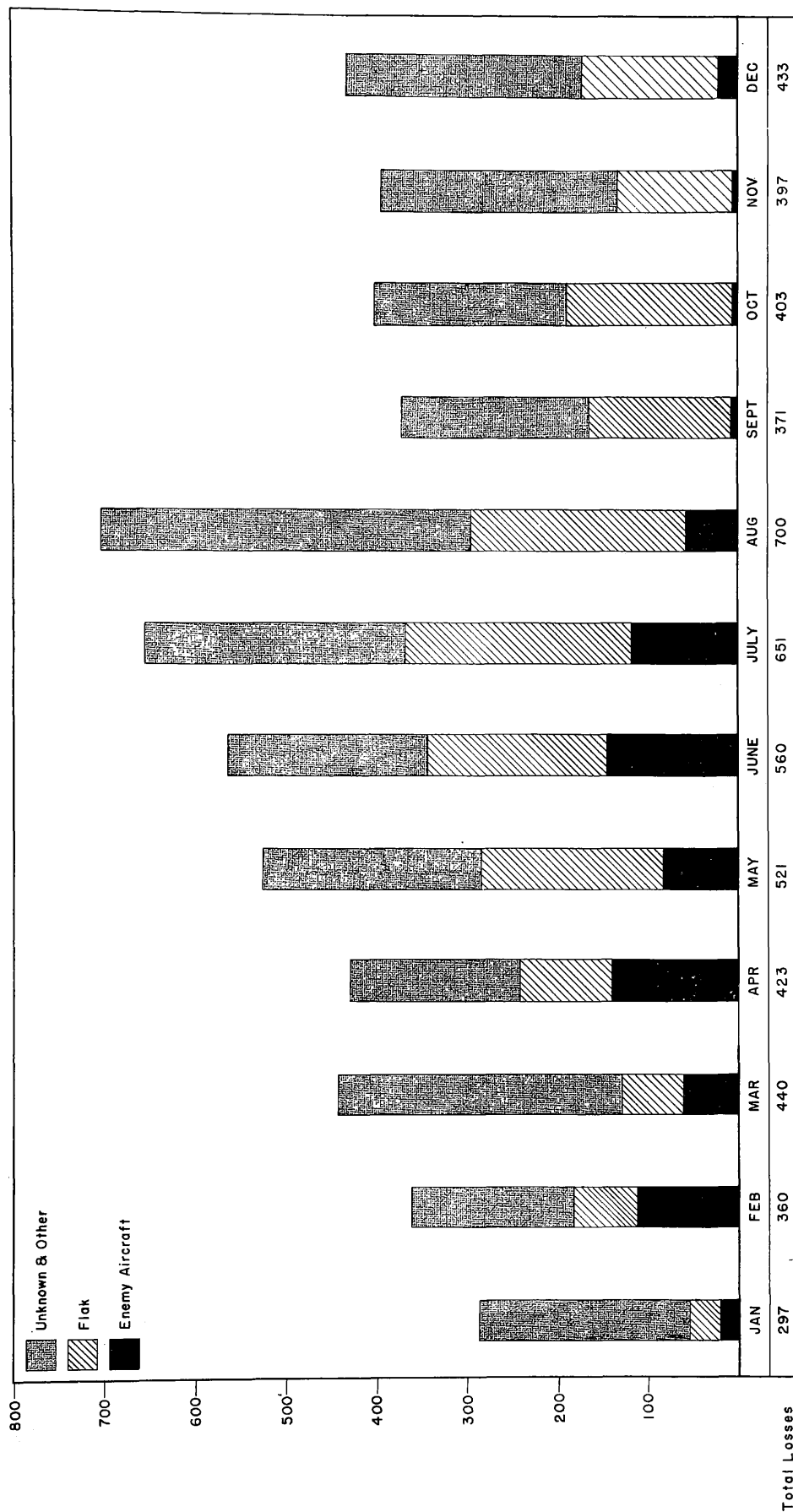


1944

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
VICTORIES IN AIR	388	420	279	714	515	580	775	286	48	75	48	90
CLAIMS ON GROUND	46	31	100	228	244	114	204	344	413	273	57	60
TOTAL	434	451	379	942	759	694	979	630	461	348	105	150

MAAF AIRCRAFT LOSSES BY CAUSE

1944

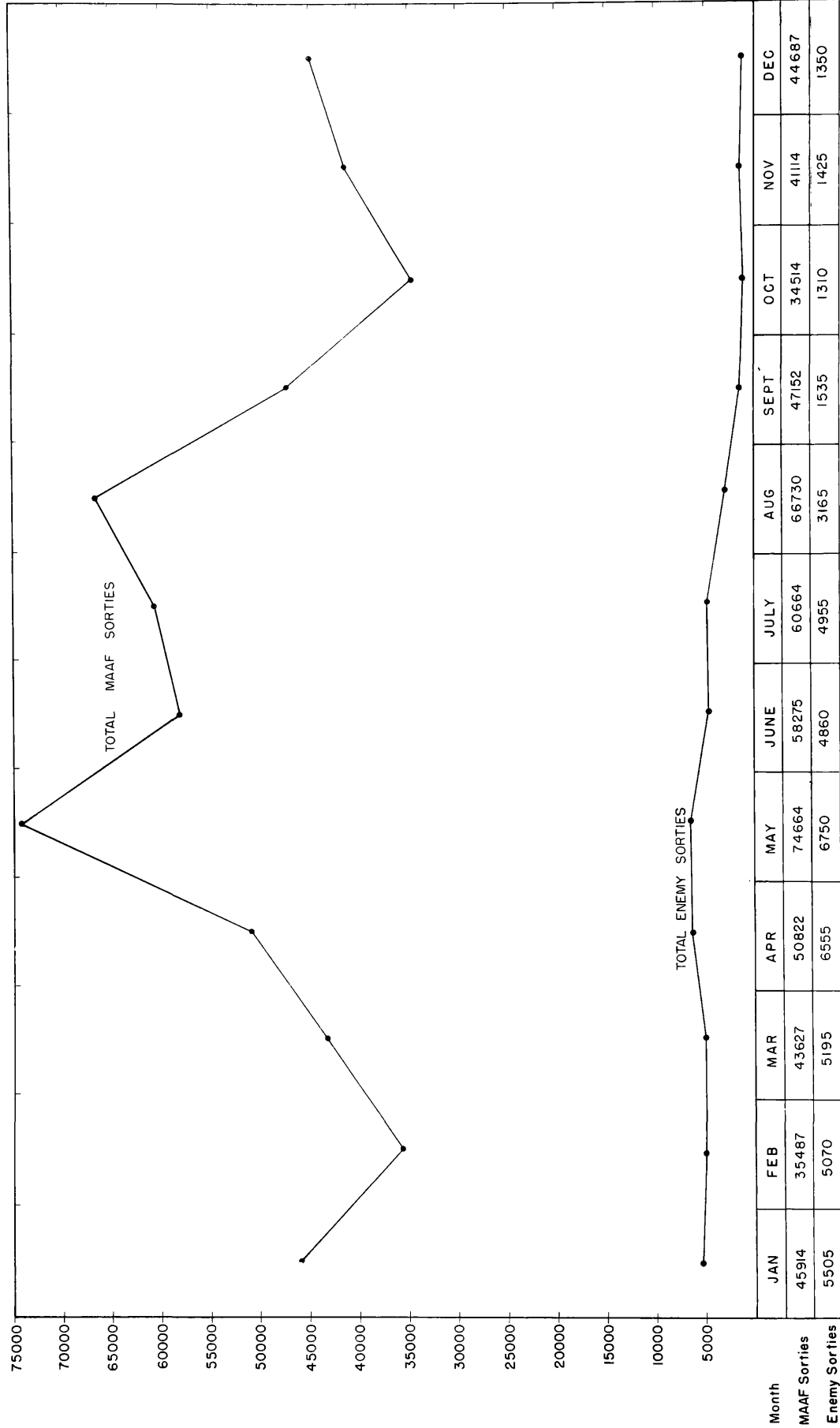


PERCENT OF TOTAL LOSSES BY CAUSE

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Enemy Aircraft	7	31	19	32	16	25	18	8	2	1	1	5
Flak	18	19	21	24	39	35	37	33	42	44	35	35
Unknown & Other	75	50	60	44	45	40	45	59	56	55	64	60

MAAF EFFORT COMPARED TO ENEMY AIR ACTIVITY

1 JANUARY 1944 - 31 DECEMBER 1944



Note: Enemy sorties data from MAAF Intelligence



**strategic
bombardment**

THE EFFECT OF ALLIED STRATEGIC BOMBING
ON THE PRESENT STATUS OF THE WAR

A statement by
Lieutenant General Ira C. Eaker,
Commander-In-Chief
Mediterranean Allied Air Forces.

Rome, Italy - 2 February 1945

This week marks two very important anniversaries for those of us who have been engaged in strategic bombing. Three years ago this week I left the United States for England with the first tiny increment of the 8th AAF and began its organization there. Two years ago at this time the subject of strategic bombing, particularly daylight bombing, was thoroughly discussed at the Casablanca Conference. Growing from those discussions it was decided to launch full-scale daylight bombing.

It is interesting to look back upon the past two or three years to determine whether the decisions then made have been proven by succeeding events. I am certain that there is no informed quarter among Allied war leadership where it is not now generally recognized that the decision to launch full-scale strategic bombing, and particularly the decision to provide a large daylight American bomber force, was sound.

The Allied nations have expended a great effort and vast resources in the strategic bombing campaign. Thousands of our highly-trained and able crews have been sacrificed in the continual air battle which has been waged in strategic bombing. I think it, therefore, only appropriate that we review briefly some of the recompense and reward we have had from that campaign.

The objective of the strategic bombing campaign was the destruction of Germany's war industry to a point where it could not sustain a winning German war effort. But there was an intermediate objective, it was fully understood and realized - the German Air Force must, first, as that intermediate objective, be reduced to such impotence that it would not :

- A. Engage in offensive operations against our ground establishments and shipping.
- B. Prevent the economical operation of our strategic bombing forces.

Appropriately, the 8th AAF, the American daylight bombing force based in England, and subsequently the 15th AAF based in Italy, set about the accomplishment of the intermediate objective. This operation was so successful that by the spring of 1944 the German Air Force was scarcely effective. It has long since

discontinued its large-scale offensives or destructive raids on England and other of our base establishments. The Luftwaffe was reduced to such impotence that it could not prevent our landings in Africa and subsequently in Italy, and it could no longer adequately support the German ground forces in the African and Italian campaigns.

The destruction of the German Air Force to a degree where it was no longer a primary factor in this war must be credited to daylight precision bombing, since it was this instrument which the Allies used to destroy the German aircraft factories.

A further evidence of the success of this campaign lies in the fact that the German aircraft industry was probably manufacturing a thousand fighter planes a month when the campaign was launched and the Germans probably planned and would have expanded their industry to the point where it could have had a capacity of nearly three thousand planes per month by now. So successful were the bombings of the German aircraft factories that by the spring of last year German fighter production was probably less than four hundred planes per month.

After the Strategic Air Force turned to their primary objective, the Germans rebuilt, insofar as possible, their broken aircraft factories and have now built their fighter production back to a point where it may be as much as a thousand per month. For that reason our attack on the German aircraft industry is a continuing commitment and we shall undoubtedly be required from time to time to knock down rebuilt fighter factories. However, the shortage of pilots and fuel, as a result of our successful attacks on his petroleum industry, have made it impossible for him to make full use of the smaller number of aircraft he now finds himself able to produce.

The strategic air attack on ball bearings was proceeding simultaneously with the accomplishment of the intermediate objective. The German ball bearing industry was selected for early attack because it was a small concentrated industry within the power of our accomplishment with the forces then available, but primarily because of its tremendous importance. The air attack on the German ball bearing industry was eminently successful. The principal factories, producing a large percentage of German ball bearings for all mechanized and motorized materiel, were destroyed or seriously damaged, and total ball bearing availability to the enemy became but a fraction of what it was at peak and what was required in the overall production of German war materiel. The succeeding and present shortage of tanks, trucks, airplane engines, submarine engines and all motorized equipment is due in considerable part to the success of our Strategic Air Force campaign against German ball bearings.

Having accomplished this assigned intermediate objective, the Strategic Allied Air Forces set about the accomplishment of the primary task -- the destruction of the most vital of the German war industry. With the forces available it was obviously not possible to destroy the whole of German industry. Thorough studies were therefore made to determine the priorities of German industry with

respect to Germany's ability to wage war. It was determined that oil was one of the most vital commodities, that it was reasonably vulnerable, and that its destruction was within the power of our accomplishment. Oil was, therefore, made the enemy target of highest strategic priority.

The success of the Strategic Air Forces in the oil campaign was as decisive, conclusive and marked as had been the earlier campaign against the German aircraft industry. As a result of the battle waged largely last summer by all the Allied Strategic Air Forces, Germany's petroleum availability was reduced to less than 25%.

The destruction by daylight pin-point bombing of the principal refineries and synthetic plants is the biggest single factor in the plight in which the German machine finds itself today.

In addition to robbing Germany of the oil products which she required in order to wage a successful offensive or defensive war, large-scale and very successful attacks were made against other critical items of industry. These included ball bearings, where the success was as marked as against oil and perhaps even more immediate in effect, and rubber, munitions, submarines, submarine engines, tanks, trucks and machine tools.

Transportation also came in for repeated attacks, particularly in areas close to extensive land battles where the immediate effect was desired and could be achieved. These continual and effective attacks against German transportation have had an effect which may not generally be recognized. The German transportation system had been designed and built to support war. Through its use it was undoubtedly planned to give the German armed forces a great elasticity and ability to move with great speed from one front or frontier to another. It is noticeable that, despite the great threat to the German homeland, east and west, there has been no marked large-scale movement of troops and resources. There has not been, as there was in the first world war, the power to defeat the enemy piecemeal by large-scale German attacks first on one front and then, following within a few days, on another front. This pinning down of the German forces and resources, this inelasticity of German defense, must be credited in large part to the strategic air attacks on the German communications system.

I think it only fair that we should therefore summarize some of the important facts of the strategic air offensive against Germany as follows :-

A. It reduced the German Air Force to impotence and has the power and capacity to keep the German Air Force beaten down.

B. It reduced the supply of petroleum products to a point far below the German's minimum requirements for the waging of successful war. This will prove on final analysis to have been the broken link in the chain of German defense.

C. It was a tremendous factor in breaking the German submarine campaign.

D. It composed the first invasion of the German homeland. For the first time, effects of modern war were brought to the German people. To date it has been brought to them in airplanes. Millions of people have been rendered homeless, their comforts of life, shelter, heat, light, transportation, -- have all been denied to many millions of Germans entirely as the result of Allied bombing. These factors have had a tremendously depressing effect on German home front morale.

E. Allied bombing has "un-gearred" the German war economy. German industry was geared to the production of the war machine and to supplying it on a high rate of output over a long period of time. The basic reason for the reverses the Germans are suffering at every point on every front is due to manpower or materiel shortages. To strategic bombing must go much of the credit for the shortage of tanks, trucks, guns, ammunition, food and other commodities which an army must have in order to wage successful offensive or defensive warfare. These German shortages exist because German factories have been destroyed. The crucial German manpower shortage has also been greatly aggravated by air bombing. Millions of their men have been required to rebuild factories, rail lines and workmen's homes. Other millions of Germans have been required to man defenses against air attack. All of these would have been available to maintain German industry and to ease the manpower shortage in war production had it not been for strategic bombing.

Any discussion of strategic bombing must include a thorough appreciation of the role of the long-range fighter which has protected our bombers and increased the magnitude of our effort, and which has in itself brought about a tremendous depreciation as the result of the large number of German planes destroyed in the air and on the ground. A few weeks ago the German was goaded into putting up a considerable air defense of between three and four hundred of his fighters, which engaged one of our large strategic bombing missions. Our fighters succeeded in destroying 98 enemy aircraft for the loss of 3 of our own. This conclusively shows the marked superiority which our fighters have obtained over the enemy. Our planes are better, and what is even more important and more decisive, our pilots are greatly superior. The superiority of our pilots is due in part to the excellence of their training. They have had plenty of airplanes in which to train, and plenty of fuel with which to fly, both of which were denied to the enemy, largely as the result of strategic bombing.

Let those who would reflect on the overall effect of strategic bombing consider well that had the Germans had our Air Force and we theirs, the landings in Africa would have been impossible; the landings in Italy would have been impossible; the invasion of France would have been unsuccessful; the Eastern Front would be no farther west than Moscow and Stalingrad. In short, we would be losing the war instead of winning it.

In drawing the foregoing conclusion, I do not in any way detract or endeavor to minimize the great and successful battles which our valiant land forces have fought, nor do I mean to detract in any way from the resourcefulness and courage of our navies. It is a fact, however, that in modern warfare the air battle must

be won first. It is a fact also that the strategic air forces have a capacity for the destruction of enemy industry which is denied to ground forces and to navies.

There is an element of our Allied Air Forces called the Tactical Air Force which works in closest liaison with the ground forces. Here, too, we on the Allied side have been equally successful. We have managed to supply each of our ground armies with a Tactical Air Command which would insure that our harbors, supply bases and ammunition and fuel dumps would be free from enemy attack; which could break up the enemy's lines of communication, destroy his ammunition dumps and fuel dumps, his motor transport and his tanks. Our tactical air forces must share, therefore, with the ground forces in the success of the land battles. Together they have joined with the ground forces to form rounded combat teams which overpowered the enemy in Africa, made the successful landings and the advance in Italy, made possible the landings in Southern France, and pushed the invader out of France, Belgium and a large part of Holland.

In reviewing the air situation one other factor must not be overlooked. The enemy has not only been out-fought, he has been out-thought! The enemy made a critical mistake in failing to supply himself with an adequate strategic air force. He built a powerful tactical air force designed for the land conquest on continental Europe, but without a strategic air force he was unable to invade England, or to destroy British or American industry, or to destroy the bases from which our invasions were launched and the ships in which they were launched. The Allies did not make that mistake. Here we out-thought the enemy. We provided an adequate strategic air force.

It has sometimes been said that the enemy technology has been superior to that of the Allies. Such is not the case. Our equipment is definitely superior to that of the enemy. Consider the airplanes now being employed in this war. In practically every case the enemy would gladly exchange his types for ours. Certainly of the principal types fighting in the European war to date the Fortress is the best daylight heavy bomber, the Lancaster is the best night bomber, the P-51 or Mustang is the best day fighter, and the C-47 is the best troop carrier. The enemy would gladly exchange any type he has available for our planes in these categories. Ours are definitely superior.

Another instance where we clearly out-thought the enemy was in the fact that our aircraft types are current and effective to date, whereas the German aircraft have been largely outmoded. The only aircraft category where this is not true is in jet fighters and it may be interesting to note that the enemy jet fighters have not, to date, been able to stop our bombing or to cause us serious losses. The enemy jet fighters have not been able successfully to attack our better fighter types such as the Mustang, the Thunderbolt and the Spitfire.

Another important factor where we out-thought and out-planned the enemy was in a true appreciation of the length and scale of this conflict. As a result of that and of the availability of our manpower and resources we are now built truly to overpower the enemy. We geared our war production to a point where we could supply our own armies, build up our own vast air forces and, in addition supply thousands of trucks and tanks and airplanes, and millions of tons of supplies to our Russian ally.

I have asked you to consider the effect of strategic bombing, the value of the tactical air forces, and the soundness of our war planning, because it is very important that our people keep the nature of this war in true perspective. We must give credit where credit is due in order to maintain the morale of our forces, and above all, we must keep the perspective clear in order that we continue to out-think the enemy and build our war machine on the soundest possible lines.



the enemy

THE REDUCTION OF ENEMY AIR OPPOSITION

I. German Air Force Production Program.

At the beginning of 1942, the labor shortage in the Reich coupled with the realization that the production of all types of arms had to be increased due to America's entry into the war, caused the Germans to plan a very large scale reorganization of the entire armaments industry. This reorganization was planned to reach its full effect during the second half of 1944 and the German High Command freely admitted that this intervening period, particularly the year 1943, was a critical one for Germany.

In this program, the expansion of the aircraft industry played a leading role and it was planned that by December 1944 the production of aircraft for use against the Allies should reach 3,000 per month as compared with the 1942 average of about 1,250 per month.

In the aircraft program the highest priority of all was given, on direct orders of Hitler, to fighter production which was to be increased from about 450 a month to 1600/1700 a month. Hitler and the High Command took a view that without a large production of fighter aircraft the skies over Germany could not be defended and the rest of the armaments program could be smashed by Allied bombing attacks.

This emphasis on the importance of the German aircraft production program is well shown by the following extract made from a speech in June 1943 by General Field Marshal Milch to a meeting attended by the heads of the German Air Force Production and Planning Sections and the heads of the Industrial Council :-

"We must not speak theoretically of Victory. We must admit that the Allies are much stronger in the air than we are and are building 3 times the number of aircraft. If we cannot carry our air production program to the full, then Germany must lose the war."

There can be little doubt that Milch, and indeed Hitler and Goering, considered their aircraft industry, particularly the factories which were concentrating on fighters, as the most vital target in the German Reich.

When this policy of reorganization along mass production lines was adopted, the Germans made one serious miscalculation, however: they reckoned only with bombing damage during a night attack and did not believe it possible that systematic attacks could be carried out by day. This error probably arose because, in those days, the night attacks had not reached their present proportion and precision attacks on factories had not commenced by the United States Army Air Forces.

The specialization and concentration involved in this expansion plan left the industry particularly vulnerable to concentrated air attack. It was probably as a precautionary measure that the Germans located most of their new fighter production at points in southern and eastern Europe which were presumed to be relatively inaccessible from British bases. The possibility of attack on Wiener Neustadt and Regensburg from Mediterranean bases appears to have been erroneously discounted.

II. The Allied Counter-Air Force Program.

By mid-summer 1943, when the USAAF launched a series of attacks against single-engine fighter plants, the German program of expansion was making rapid progress. Single-engine fighter output had risen roughly from 400 in July 1942 to 900 in July 1943. Most of the increase after November 1942 came from three Messerschmitt 109 complexes at Wiener Neustadt, Regensburg and Leipzig. Production of the Focke-Wulf 190 rose from 100 in July 1942 to a peak of 275 at the end of July 1943. During 1942, the transfer of Focke-Wulf plants, from the Bremen area to points in eastern Germany and Poland marked a shift in the bulk of FW 190 production to this less vulnerable area, leaving only a small scale output in northeast Germany.

A substantial dent was made in the German fighter production program following USAAF attacks between late July and early November 1943. Mediterranean based aircraft launched their first attack against targets in the German Reich by attacking the Messerschmitt 109 factory at Wiener Neustadt on 13 August 1943.

By January 1944 this bombing program already had important effects on the defensive capabilities of the G.A.F. It is estimated that these attacks caused production to fall from the peak of 900 in July to an average of about 625 during the four months August through November 1943. Had the Germans been able to adhere to their schedule, output would have exceeded 1,000 by November. Equally important to the loss of 1,500 aircraft, these attacks thoroughly disrupted, for the time being, the German program of fighter production expansion.

This curtailment of production already had a substantially adverse effect on German Air Force defensive strength and rate of activity. Whereas single-engine fighter strength was increasing at a rate of 150 per month during the first half of 1943, this fact was abruptly reversed during August and September.

The primary effort of the Strategic Bomber Forces had been focused on German single-engine fighter plants but in January 1944 the program was broadened to include twin-engine fighters and bombers as well.

The six days from 20 through 25 February 1944 witnessed a succession of strategic bombing operations which proved to be the heaviest blow delivered against the enemy's defensive air power. A total of 6,245 tons were dropped by U.S. bombers on 17 aircraft and ball bearing factories with significant results. These plants accounted for roughly 2/3 of the single-engine fighter output, 90

percent of twin-engine fighter production, one-third of bomber output and 60 percent of European Axis ball bearing production.

By March 1944 it was clear that sufficient progress had been made in securing air supremacy, particularly with the assistance of effective long-range fighter escort, so that daylight strategic bombers could embark on the task for which they were originally intended.

The successful accomplishment of the bombardment program against the German Air Force and its production facilities had served a three-fold purpose: (1) eliminated serious air opposition to Allied offensive ground movements; (2) greatly increased the vulnerability of other critical German War Industries to air attack and (3) reduced considerably the costs of Allied air operations because of losses due to enemy air opposition.

In spite of the concentrated offensive against it, the German fighter industry displayed remarkable powers of recuperation, which is to be explained by: (a) the large reserve of new equipment and capacity in the industry because of the expansion program and (b) the high priority assigned to the task of repairing bomb damage.

The subsequent development of a successful dispersal policy has enabled the German aircraft industry to increase its output of fighters from a low point of 500 - a result of our attack in 1944 - to a present figure of 1400 to 1500. The German Air Force first line fighter strength has also shown a similar increase since wastage experienced in the battle of France, from a low point of 1750 to the present level of 2400 of all single-engine type fighters.

During the great part of 1944, however, the German Air Force failed to maintain a scale of effort commensurate with its own first line strength, suggesting that production and front line strength may no longer be the limiting factors in the effectiveness of its single-engine fighter force. The rise in wastage rate per sortie, which had caused the High Command to impose conservation measures, the decline in quality of the fighter pilot force, and the gasoline shortage are believed to be more important factors.

III. The Enemy's Defense Against Strategic Air Operations.

As a result of attacks on the German aircraft industry, the German High Command was obliged to impose drastic conservation measures in order to hold down wastage and thus preserve strength in the face of lower production. Over a period of time, fighters have gradually been withdrawn from tactical zones and forward interception areas. This has substantially reduced the air opposition to Allied surface operations and has correspondingly increased enemy ground force vulnerability to Allied tactical aircraft. The primary and almost exclusive mission of the G.A.F. fighter arm has become the defense of the German Reich itself. Contact with Allied escort fighters has been largely avoided where possible; even contact with bombers has been avoided except where the opportunities for low-cost victories appeared good or where the apparent target was of vital importance

to the German War Economy. On cloudy days when bombing was less likely to be accurate and flying accidents high, enemy fighters have frequently failed even to put in an appearance against our bomber formations.

It is significant that during 1944 the enemy was able to put up only a total of 47,675 sorties in the Mediterranean area, which total includes reconnaissance, bombers, anti-shipping sweeps and fighters, for defensive effort against Strategic Air Force attacks in Reich territory. The enemy began the year 1944 with 5,505 sorties for January, reached a peak of 6,750 sorties in May, declined to a low of 1,310 sorties in October and finished 1944 with 1,350 sorties.

Mediterranean based bomber aircraft, while engaged in the process of pouring over 386,144 tons of bombs on targets in Germany and German-held territory during 1944, further reduced the effectiveness of the German Air Force by attacking it on the ground and inflicting heavy losses on the fighters defending targets vital to the German war machine. Over 5,598 enemy aircraft were destroyed; 1,838 on the ground, the other 3,760 in the air. Another 2,407 were damaged; 1,143 on the ground, 1,264 in the air.

The number of German aircraft destroyed by M.A.A.F. in the air, month by month, has been almost in direct ratio to the German Air Force scale of effort and our losses to enemy fighters have likewise been reduced to correspond to the number of German fighters which come up to challenge our attacking forces.

Even though the enemy's air opposition has been effectively reduced, Allied bombardment operations are nevertheless subject to severe punishment by enemy flak.

From the beginning of strategic bombing operations to the present, the cost in aircraft paid to the enemy due to his anti-aircraft defenses has not been one measured in greatly varying figures. The enemy long ago assessed the value of his strategic targets and allotted his relative anti-aircraft protection to these targets. This cannot be taken as being the case with tactical targets, however, which change as the tactical situation necessitates. Thus it can be expected that certain flak losses would be inflicted on our bombers which attack these vital objectives. These losses attain a certain ratio to the number of guns available to fire at our bombers, the number of aircraft presented as targets, the efficiency attained by the enemy gunners, the advancement in increased performance of enemy gun and radar equipment, plus our own ability to outwit the enemy defenses so far as practicable. A certain number of losses due to flak were inevitable and that ratio was settled out as the war progressed. Following is a list of sorties flown by the 15th United States Army Air Force and losses due to enemy action, both enemy aircraft and flak, for every third month of 1944. Statistics for every third month are considered sufficient to form the picture of relative losses in proportion to the number of sorties flown.

<u>Month</u>	<u>No. A/C Airborne</u>	<u>Losses to E/A</u>	<u>Losses to Flak</u>	<u>Percentage</u>
January	7,967	82	16	.2
April	14,833	129	64	.4
July	20,803	110	163	.8
October	14,823	0	101	.7
December	17,085	18	89	.6

It is revealed that the losses to flak are quite stable in proportion to the number of aircraft airborne on missions. Regardless of opposition by enemy fighters this ratio of loss to flak would be approximately the same as long as the aircraft visited the certain vital strategic targets. It is significant that for the first 10 months of 1944 a continuous increase in the loss ratio from flak has occurred. This can be attributed to: (a) with continued practice, the efficiency of enemy AA gunners has improved quite markedly. (b) New technical improvements have been introduced in the gun and radar equipment. (c) New tactics have evolved to thwart our increased bombing effort; for instance, large "grossbatterien", introduction of the "zug" control which allows a gun in one area to fire on information received from a radar position which is located in a distant area, and (d) as the war progresses the area occupied by Germany is being steadily decreased. This is continuously freeing guns which had been needed to protect objectives which were previously far removed from the German Reich. Those guns plus newly produced equipment can now be deployed to supplement presently defended objectives or redeployed at additional important points, thus making the problem of routing of our aircraft more difficult each day.

Therefore, it can be expected that future flak losses will be on a level comparable with present losses. This loss-level possibly may be lowered by the increased use of technical equipment, particularly in the field of radar counter-measures.



oil

HEADQUARTERS
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MAAF ATTACK ON THE AXIS OIL INDUSTRY

Since the middle of 1944 the primary objective of the Strategic Air Forces in their attack on German industry has been the sources of the enemy's oil supply. The Mediterranean Allied Strategic Air Force (which consists of the 15th AAF and an RAF heavy bombardment group) has played its full part in the oil campaign.

1. WHY WE ARE ATTACKING OIL

The basic philosophy of strategic precision bombardment, as practiced by the Army Air Forces, is to single out an industry vital to the enemy and subject it to concentrated and systematic attack, with a view to knocking that industry out. In many ways, oil constitutes an ideal target system for precision bombing.

a. The vital importance of oil to modern mechanized warfare is well known. Gasoline is required to operate aircraft, tanks and military motor transport, and is by far the most efficient fuel for civilian motor transport.

b. A large proportion of the German oil supply was used directly by the armed forces.

c. Throughout the war the German oil position has always been difficult. Continental Europe formerly obtained most of its oil from overseas sources. The blockade has rendered it dependent on the limited oil supply of German-occupied Europe and on a new synthetic oil industry, constructed largely since the outbreak of war at a great cost in manpower and materials.

d. The effects of an attack on oil are felt with a minimum delay. Like ammunition, oil is expendable, and because of his limited supplies the enemy was unable to build up large reserves.

e. The enemy could be deprived of the bulk of his oil supply by the elimination of a reasonably small number of targets. 25 synthetic plants and 59 crude oil refineries accounted for 90% of the oil products available to Germany and its European satellites.

f. Dispersal on a large scale is not practicable. The enemy can protect some industries from strategic bombardment by dividing them into a great number of small units, which present difficult targets. Neither synthetic oil plants nor crude oil refineries can easily be dispersed in this manner.

2. THE TIMING OF THE ATTACK ON OIL

In spite of its obvious advantages, the systematic attack on oil did not commence until the late spring and summer of 1944. The Strategic Air Forces delayed their attack until they could do a thorough job. Anything less would have been inadequate for several reasons:

a. Despite the enemy's vital need for oil and his limited supplies, a moderate reduction in those supplies would not be fatal. Substantial economies in industrial use could be secured. Further reliance could be placed on substitute fuels. Even the consumption of gasoline by the armed forces could be cut without any immediate effects on first line fighting ability, provided the burden was placed on training and other rear area establishments. Thus an attack on the German oil industry, if it were carried out in inadequate force, would fail to achieve decisive military results.

b. The attack on oil installations had to be sustained over a period of months. We knew that the Air Forces cannot count upon crippling an installation in the first attack. Furthermore, it was to be expected that, once the initial advantage of surprise had been lost, the enemy would make the task more difficult by concentrating formidable anti-aircraft defenses around his vital oil installations. Finally, the Germans had already provided abundant evidence of the feverish energy they were prepared to throw into the rebuilding of targets that were virtually destroyed by our bombers. For these reasons, it was clear that repeated attacks on each oil target might be required.

Fully appreciating the magnitude of the task, the Strategic Air Forces were unwilling to embark on the oil campaign until they were satisfied that they could carry it through to completion. They saw that the time was not ripe for an attack on oil until three conditions had been fulfilled.

First, they required bases within range of the entire Axis oil industry, including the vital Ploesti region. Suitable bases were not acquired until 15th Air Force began operating from Foggia at the end of 1943.

Second, they required a sufficiently large striking force to attack 84 targets and to keep them under attack at regular intervals.

Finally, they required air supremacy in order to enable the striking force to penetrate deep into enemy territory to attack remote targets in Central and Eastern Germany. This supremacy was achieved in the spring of 1944. By that time, our strategic bombardment of fighter aircraft factories had completely disrupted the enemy's plan for expanding his defensive fighter force. Equally important, we had long range fighters capable of escorting our bombers all the way to the target.

3. THE TARGETS

The Axis oil supply was obtained from the following major sources:

Synthetic Oil Plants	40%
Crude Oil Refineries	50%
Other Sources	10%

The 50% obtained from crude oil passed through 59 major refineries, stretching all the way from Hamburg in the northwest to Ploesti in the southeast. The synthetic oil industry consists of 25 huge plants located in and just outside Germany itself. The "other sources" represent chiefly benzol derived from coke ovens, which, mixed with gasoline, makes a satisfactory motor fuel. With respect to gasoline, the synthetic plants are of much greater importance, contributing 60% of the supply of this vital product.

The task allotted to MAAF was the immobilization of the 46 crude oil refineries and 5 synthetic plants lying within its range. Altogether these installations accounted, according to rough estimates, for about 60% of the entire Axis oil supply (excluding that portion derived from "other sources", which were not considered primary targets). Dominating the MAAF targets was the group of refineries situated in and near the town of Ploesti. Almost the entire output of the Roumanian oil fields passed through these refineries. They contributed about 30% of the entire Axis oil supply, and an equal supply of gasoline, the oil product which we were most anxious to deny the enemy.

4. THE BATTLE OF PLOESTI

a. The Target.

The 11 refineries in the Ploesti area, together with a few smaller installations scattered about Roumania, had a yearly capacity for refining 9,000,000 tons of crude oil. The yield of the Roumanian oil fields has dropped to only 4,800,000 tons. Thus the Ploesti refineries had almost double the capacity required of them. The gallant low level attack by 9th Air Force bombers in August 1943 inflicted severe damage on several of the largest refineries. Although much of this damage was repaired, two of the installations were not restored to working condition. Thus, when the MAAF attacks began in April 1944, the capacity had already been reduced to 8,000,000 tons, and the task confronting MAAF was correspondingly lightened by the 9th Air Force raid.

b. The Defenses.

The enemy was, of course, well aware of the importance of Ploesti. At

the outset of our attacks, 150 first class German fighters were stationed in Roumania, with the primary mission of protecting the refineries. The ring of 250 heavy flak guns in the Ploesti area was one of the largest and certainly among the best coordinated and trained anti-aircraft installations in Europe.

A relatively new type of defense was first encountered in well-developed form at Ploesti. In our earlier attacks we noted that the area was surrounded and criss-crossed by lines of smoke pots. The smoke screen they put up was never sufficiently thick to impede our attacks. As the attacks developed in May and June, however, the smoke defenses were so intensified and improved that they obscured the target. The Ploesti smoke screen became a major obstacle to the successful prosecution of our oil attack, and a large portion of our effort was devoted to overcoming it.

c. The Effort.

The battle of Ploesti began on 5 April 1944. At that date, the advance of the Russian armies in the south had carried them across the Ukraine and Bessarabia to the Pruth River. The target for the first attack was the Ploesti marshalling yards. The objective was to aid the Russian armies by disrupting the German lines of communication leading to the front in Roumania. But the refineries adjacent to the Ploesti marshalling yards suffered severe damage, and the weight of subsequent attacks was shifted to the refineries themselves.

Between 5 April and 19 August, MASAF heavy bombers flew 5287 sorties over Ploesti and dropped 12,870 tons of bombs. In addition, in an effort to penetrate the smoke screen, a dive bombing attack was made by 38 P-38 fighters.

d. The Cost.

These attacks cost us 237 heavy bombers (including 15 RAF night bombers), 10 dive bombers and 39 escorting fighters. More than 2200 American airmen were lost in attacks on Ploesti. Almost half of this number returned to us in one of the most dramatic air rescue operations undertaken to date. Shortly after the capitulation of Roumania, our B-17s evacuated from Bucharest some 1060 airmen taken prisoner as a result of operations over Ploesti and other targets in Roumania.

e. The Results.

Ploesti became the first major target for strategic bombardment at which the Air Forces were able to observe at first hand the results of their efforts. These results were closely in accord with the estimates made during the course of the attacks. It was confirmed that the attacks of April and May were remarkably successful, and that by the middle of June all but the two smallest refineries of Ploesti were out of operation. It was at this period, however, that the

smoke screen was operating at its maximum effectiveness. Under cover of this screen, the enemy put into effect an energetic repair program. He staged a creditable recovery, and output increased until we were able to devise tactics which reduced the effectiveness of the smoke screen. The screen presented our tactical planners with one of their most difficult problems. After a period of experimentation, they gained the upper hand over the defenses in early August, and shortly before the Roumanian surrender delivered some crushing attacks on Ploesti. As a result of these attacks the refineries were reduced, at the time of the surrender on 23 August, to only 10% of their normal rate of activity.

During the entire period of attack on Ploesti, from April to August, the average production rate was reduced by 60%. More important is the fact that exports of gasoline to Germany and the Wehrmacht were cut to one-third of their previous level. This loss represented about 15% of Germany's gasoline supply.

5. THE ATTACK ON OIL IN CENTRAL EUROPE

The capture of Ploesti removed MAAF's largest single oil commitment. But it left within MAAF range a substantial portion of the oil remaining to Germany. During the last few years, oil was struck in Austria and Hungary, and these new fields have developed rapidly. Much of the product is refined locally; the remainder was shipped to refineries in Czechoslovakia, southwestern Poland, and Germany itself. MAAF broadened its campaign to include all these installations within range, in June. During the course of the summer, these refineries were attacked whenever operational conditions prevented attack on Ploesti or the synthetic plants, and their production has been reduced to a fraction of its former potential.

After Ploesti, the most important group of oil targets in the MAAF area is the synthetic plants, of which three are located in Silesia and one at Brux in northwestern Czechoslovakia. Brux, the largest of the synthetic installations, has been kept out of action almost continuously since last May, thanks to the combined efforts of the three strategic air forces - 8th and 15th Air Forces, and RAF Bomber Command.

The three Silesian plants, and a fourth in southwestern Poland, have been the concern of 15th Air Force alone. Since the first attack last July, 15th Air Force has directed over 10,000 tons of bombs at these plants in 37 attacks. The most important of the plants, the Blechhammer South installation, has alone been the target for 4300 tons in 15 attacks. Many of these attacks were delivered in weather conditions which prevented visual bombing, and necessitated the use of the blind bombing techniques that have been developed recently. It was the outstanding success of a series of these blind bombing attacks in December which led General Spaatz to describe the 15th Air Force as the leading exponent of blind bombing in the world today. It has been estimated that the production of

these four synthetic plants has been reduced by 80% during the period since attacks commenced. The Polish plant has already been captured by the advancing Russian armies. The three Silesian plants, all of them on the east bank of the Oder, are in imminent danger of capture. When they fall, MAAF's second major commitment in the oil campaign will be liquidated.

6. THE RESULTS

The campaign against the Axis oil supply is a joint effort in which the strategic bomber forces based in Italy and in the United Kingdom have played their parts, and have received valuable assistance from the Russian armies. The effectiveness of the effort is reflected in the fact that the output of motor fuel available to the enemy was reduced, by September, to less than one-fourth its pre-attack level. Furthermore, despite the difficulty of precision bombardment in the unfavorable weather conditions that prevail in winter, the strategic air forces have succeeded in preventing any substantial recovery. Production now stands at the lowest point it has reached to date, and the outlook is for further reduction rather than recovery.

There is abundant evidence of a most gratifying sort that the shortage of oil has had, and continues to have, far-reaching consequences. As might be expected, much of this evidence relates to the ruthless constriction of the oil supply for non-military uses. It is reported that motor vehicles have all but disappeared from the streets of German cities; that street cars are used to haul freight; that, as long ago as August, Berlin physicians lost their allowances of motor fuel. The effects of the shortage on civilian life and industrial production cannot be known until after the war.

The enemy has undoubtedly attempted, to the best of his ability, to shield the armed forces from the shortage of oil. But the shortage has been so severe that the Wehrmacht and the Luftwaffe have suffered along with industry. The army has drastically cut its complement of motor transport, and a large percentage of the remaining vehicles are operating on inefficient substitute fuels. In Italy, it was ordered that all vehicles behind the front should be drawn by animals in order to conserve fuel. It was as a result of this order that one observer reports the anomalous spectacle of a Tiger tank drawn over a North Italian road by a team of 16 oxen.

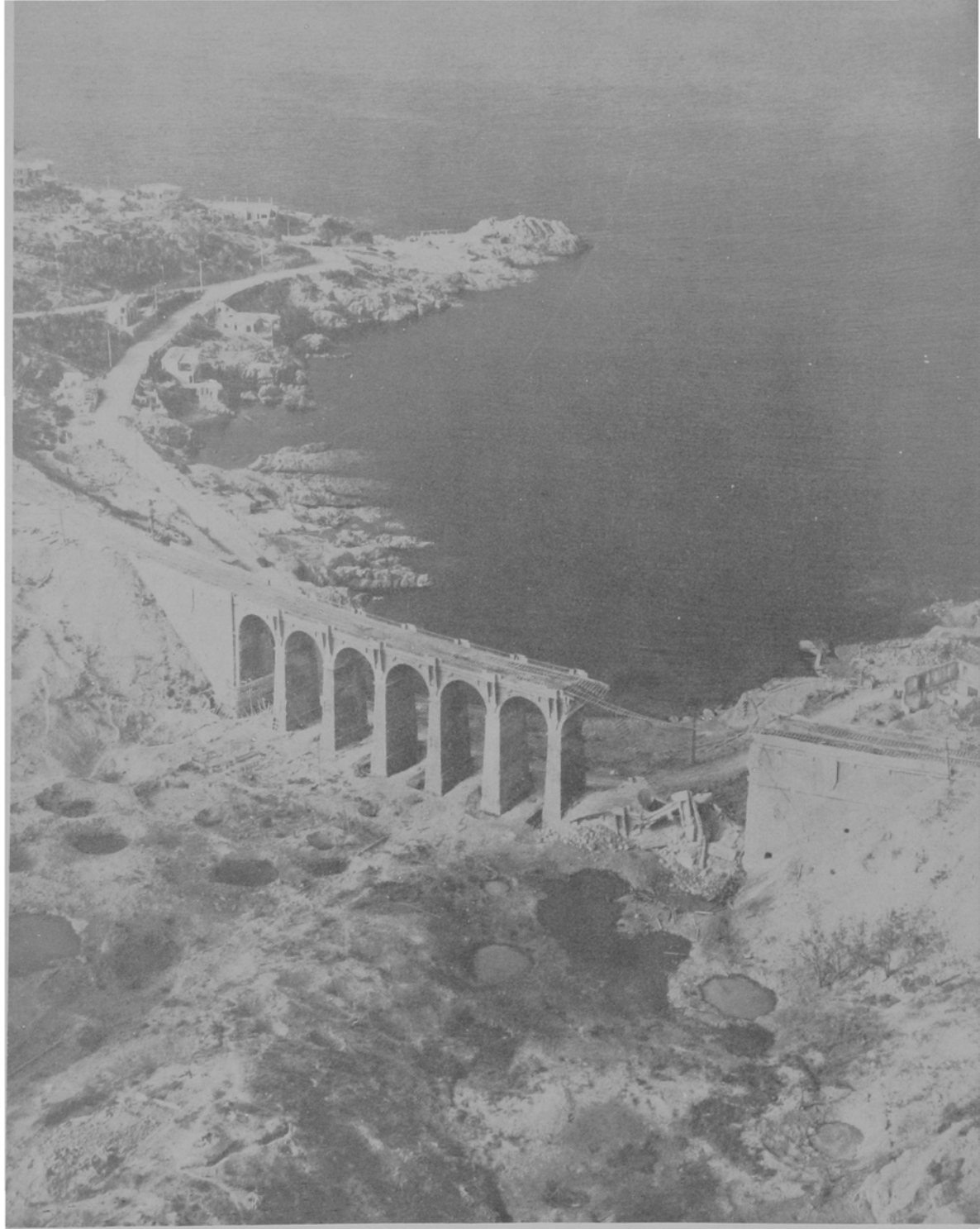
At crucial junctures in the land battle, the enemy's lack of motor fuel has had a telling effect. His counter-attacks on the Normandy bridge-head were weakened because he had insufficient fuel to drive all his serviceable tanks. In almost every retreat, he has abandoned on the battle-field tanks and other vehicles in good condition, but with empty fuel tanks. These front line shortages are caused, in part, by our attacks on his communications, which prevent him from bringing up sufficient gasoline to the points where it is required. But they are also due to the basic shortage, which prevents him from building

up adequate tactical reserves in advance.

The immobility of the enemy's armies, owing to lack of fuel, enabled us to convert the original break-through in France into a disaster in which the enemy lost a major portion of his armies. During the period of hard, but relatively immobile, fighting in the autumn, the Wehrmacht held its fuel consumption down to the minimum, and was able to accumulate just enough gasoline to launch the Eifel counter-offensive. Inadequate fuel supply was again one of the factors responsible for the check to that offensive after the first week. It can be assumed that German armies are feeling the effects of the gasoline shortage as acutely on the Eastern Front as in the West.

The strategic air forces crippled the enemy's fighter aircraft production in late 1943 and early 1944. Perceiving the importance of maintaining an effective fighter force for defense against strategic bombardment, and impressed by the destructiveness of precision bombing, the enemy embarked on an ambitious program of dispersal. During the course of 1944, tremendous resources were invested in the task of rebuilding the fighter aircraft industry on a greatly enlarged and widely dispersed pattern. This program has been successful. Fighter aircraft production has recovered to a rate greater than that achieved before our attacks began, and the numerical strength of the fighter force was restored to a new high level. Having built up this force, the enemy has found himself without enough fuel to use it effectively. The fighter force has made respectable efforts from time to time, but they cannot endure any sustained period of high activity.

If the fuel shortage has seriously impinged on the fighter force, its effect on the other branches of the Luftwaffe has been fatal. The bomber force has been virtually abandoned, and the pilot training program has been drastically curtailed. The hours of flying training have been reduced in successive steps, until the student pilot now receives less than half the number of hours in the air formerly considered necessary. The result is that, when he receives his wings, the German fighter pilot is in no position to meet our own fighters on equal terms.



tactical

AIRLOCK IN ITALY

By: Brigadier General LAURIS NORSTAD

Chief of Staff, 20th Air Force

(Former Director of Operations, MAAF)

"Airlock in Italy" was prepared for Air Force, the official AAF magazine, by General Norstad and was printed in the January issue.

Most of this past year the Italian campaign has been generally overshadowed by developments surrounding the invasion of Western Europe. Too often it has been thought of as a secondary campaign, a sort of understudy to the lead. It may have been "secondary" only in the sense that the larger number of men and planes was quite naturally allocated to the assault from the West. But from every other standpoint the long, bitter battle for Italy has achieved not only complete dominance of Hitler's southern front, given the Allies control of the Mediterranean and airbases from which to pound the Reich's southern industrial targets, but tactically speaking has written the answers to many military question marks - answers which aided in the sensational conquest of France.

We've learned a lot since El Alamein about air strategy and tactics in a combined land-air offensive - in each succeeding step in the long march across Africa through Tunis, then to Pantelleria, Sicily, Salerno and Anzio, and finally to the battle for Rome and the retreat of the Germans northward. We learned what tactical air power could do - and what it couldn't do. More important, we had demonstrated what it should do.

That demonstration reached its peak in the great combined ground-and-air offensive that began on May 12 when Allied foot soldiers surged forward into action from Cassino to the sea and ended with the withdrawal of the Germans to the Pisa-Rimini line. Let us call this Operation CORONET, an unofficial name. The preceding aerial preparation from mid-March to the May 12 D-day was known as STRANGLE. Sufficient time has now elapsed since the conclusion of STRANGLE and CORONET to view them objectively from the standpoint of their contributions to the doctrine of air power.

When CORONET began in May, air and ground forces were given two complementary objectives. Mediterranean Allied Air Forces had as its mission "to make it impossible for the enemy to maintain his forces on his present line in Italy in the face of a combined Allied offensive." Ground forces were "to destroy the right wing of the German 10th Army; to drive what remains of it and the German 14th Army north of Rome; and to pursue the enemy to the Pisa-Rimini line, inflicting the

maximum losses on him in the process." In the next six weeks, working together in perfect harmony, the two forces did just that.

By any measurement this was a resounding military feat. It caused the Germans at least 80,000 casualties. It wiped out as effective fighting units a score of their most seasoned divisions. It destroyed and damaged fully 15,000 German transport vehicles and immeasurable mountains of military supplies. It was the first Allied offensive to capture an Axis capital. It was also, in General Alexander's words, the "first blow in the final destruction of the Nazis."

To have accomplished it, we had to have air superiority - and we did. Actually, therefore, the air participation in CORONET started long before D-day on May 12. It goes back not only to the early battles in the Tunisian and Sicilian skies which greatly weakened the Luftwaffe's striking power, but to the continuous blows directed against the sources of the enemy's aircraft by strategic air forces from both England and Italy. By the time CORONET began, the Luftwaffe was virtually eclipsed. Against the 20,000 combat sorties MAAF flew in the first week of the battle, the Germans were able to make only 700.

Granted, then, our air superiority. How we employed it is our chief concern here. Out of the Italian campaign comes this conclusion, established even more firmly than ever and later proved again in France: that in the absence of an effective enemy air force, the primary role of tactical air power is to operate against enemy supply lines in the rear rather than in the immediate battle area.

Back in the North African campaign, when General Montgomery and Air Marshal Coningham used their small air force to nip off Rommel's tenuous and over-extended supply lines, cutting roads, downing air transport, sinking ships and strafing motorized transport all the way from Alamein to Tunis, they provided the first proof of the wisdom of this doctrine. But North Africa did not provide a complete proving ground for the tactics of interdiction, since the supply lines to be hit were so few in number and relatively so vulnerable. The chief problem there was to find enough planes to do the bombing and at the same time furnish sufficient escort to protect the bombers from the still-powerful Axis fighter forces.

We were handed that test with Sicily and southern Italy. Not until then did the Allied air forces come to grips with a well-developed communications network neither simple nor vulnerable. And by then the Luftwaffe was tottering while Allied air strength was soaring, so on all counts there was every reason for regarding this period as a significant demonstration of what a tactical air force could do to enemy lines of supply.

Attacks on marshalling yards in Italy came first, as the major means of disrupting the enemy's flow of supplies. Although MAAF heavies ceaselessly pounded these yards all through the early fall of 1943, the long-range results were disappointing. We knocked out many marshalling yards, it is true, but it began to be apparent that while these yards were undoubtedly essential for handling the large volume of traffic required for the normal subsistence of Italy's civilian population, it was still possible for the enemy to move the relatively small

amount of traffic needed for military supply (about 5 percent of the total) without using extensive marshalling yard facilities. This the enemy did, as a matter of fact, by making up divisional trains in the zone of the interior and moving them directly to a unit rail head located at any convenient point along a right of way in the vicinity of a highway.

Nonetheless, rail was still the biggest carrier and as such the most important objective in our interdiction plan. What we had to do, therefore, was to cut all rail lines, quickly and simultaneously, if we were going to keep the enemy from getting his vital 5 percent through. The decision to attack bridges, tunnels, and viaducts on a large scale was made in the face of opposition from experts who contended that bombing such targets was uneconomical. Also, these objectives required greater bombing accuracy than the same observers were willing to concede was possible.

Subsequent results disproved both these arguments. The first attempt to establish a line of interdiction clear across Italy by cutting bridges rather than smashing marshalling yards was made in mid-October by 12th Bomber Command, then under Lt. Gen. J. H. Doolittle. In three weeks' time, they had cut the three major rail lines down Italy.

If we had really known how successful these operations actually were, Rome might have been a different story. According to an Italian general who reached the Allied side shortly after these attacks, the Germans actually considered abandoning Rome in consequence. Said the general: "Unaccountably the Allied raids on this important communication line ceased at the critical point and were switched elsewhere. By rapid and strenuous reconstruction work, which they were left in peace to do, the Germans restored the line. . ." Unfortunately this success was not perceived by the Allies, and bad weather and other commitments caused MAAF to abandon these interdictory attacks.

But plans went ahead in support of the AAF's belief in daylight precision bombing of "small" targets as well as the marshalling yards. In spite of opinions to the contrary, we were convinced "bridge-busting" would pay dividends with compound interest. When STRANGLE began, these "bridge-busting" policies had been adopted and a concerted program to knock out all German communications was on.

The Pisa-Rimini line marked the divisional assignments between strategic and tactical air forces. Tactical was to cut and keep cut all lines supplying the German front; strategic was to hit the marshalling yards in northern Italy beyond the reach of tactical. This worked very well - and this time the marshalling yards were worth hitting, for as the enemy's lines were cut farther down the peninsula by tactical, his supplies got hopelessly dammed up in the north, making lucrative targets for strategic. Coastal Air Force, meanwhile, was to cut the sea-lanes. Gradually we began quite literally to strangle to death the Germans entrenched in central Italy. We cut their railroads and forced them to move their supplies by motor transport, a slow, costly business proving a heavy drain on rapidly diminishing fuel supplies. Then we bombed their roads and trucks and caused them to depend

more on sea routes. So we bombed their shipping and their harbors. Eventually we had choked off all but a trickle of their supplies. What stocks were left were further reduced by bombing and strafing.

It is difficult to say exactly when STRANGLE began. Probably March 15 - the date of the Cassino bombardment - is as good choice as any, for it was the failure to break through that German stronghold which finally permitted the release of the main fighter effort from the immediate battle area to attacks on supply lines. Once these aircraft were released, the accomplishments of Tactical Air Force (AAF 12th and British Desert Air Force), Maj. Gen. J. K. Cannon's command, in succeeding days exceeded even optimistic expectations, and by March 24, just nine days later, we had definitely cut all rail lines to Rome. And the "cuts" were kept up in such a manner that at no time after that date did any through traffic reach Rome.

Even so, it must be admitted that by the time CORONET'S great land-and-air assault was to begin, the objective of STRANGLE - that of using air attack to make it impossible for the Germans to operate in central Italy - had not been achieved. The enemy was not forced to withdraw all or even part of his forces due to strained supply problems. One of the things we learned is that, by carefully husbanding his stores, the enemy could hold out much longer than we thought. Supplies of ammunition, brought forward and distributed months before, had not been exhausted. Food shortages were made up at the expense of the local Italian population. And a good bit of material did move forward under cover of darkness by trucks and wagons and along the coasts by small craft.

There was no doubt, however, that although the enemy was not yet completely strangled, he was nevertheless gasping for breath. Many sources testified to the serious problems facing the German armies. They were short of gasoline and ammunition, and the appearance of prisoners, as well as their statements, evidenced serious food shortages. Units moving down from the north were forced to proceed by motor transport and by foot for hundreds of miles and were continuously attacked on the way. They frequently arrived in the battle area only after having suffered considerable casualties, losing large quantities of their motor transport and heavy equipment, and being dispersed to such an extent they could not enter battle as an integrated unit.

The enemy can hold out the way he did only if his situation remains static - if he's not being forced to put up a stiff fight.

So it was decided that the best way to meet the problem in Italy was to use the air to prevent reinforcements of the enemy's supplies and personnel, at the same time forcing him, by a large-scale, determined Allied ground attack, to use up at a very fast rate whatever he may have left. This was CORONET - an operation designed to make the enemy "burn both ends against the middle."

In retrospect, CORONET divides itself into three definite phases. The period from D-day to the 23rd of May may be properly called the Assault phase, that from

May 24 to June 10 the Exploitation phase, and the period after June 10 the Sustained Offensive phase.

Except for immediate battle area operations, the Assault phase represented no departure from the tactics which had been in effect for two months, except in their intensity. Attacks were levelled not against any particular category of targets, such as bridges, but against sections of rail line. This included not only bridges, tunnels, viaducts, etc., but also open stretches of track. Aircraft assignments were normally these: medium bombers were to go after major bridges, marshalling yards and repair shops; fighters were to concentrate on active trains, tracks, major bridges under repair, and secondary bridges.

Here the fighters were able once more to prove their worth on long-range tactical assignments. On a number of days more than 100 track cuts were created by their effort alone, and throughout the entire period they averaged more than 30 cuts a day. When it came to bridges, in many cases they were more economical than the mediums. One of their greatest assets lay in their ability to operate in weather that would ground the mediums.

Since roads were so much more easily repaired than rail breaks it was difficult to keep them cut. Attacks were usually made as late in the day as possible with the object of creating traffic blocks at night and a difficult re-routing problem for convoys. This not only provided motor transport targets for night intruders but forced the Germans onto secondary roads where they couldn't make good time. Very often, as a result of this technique, motor convoys would be found in the open road at dawn - perfect targets for daylight raiders - whereas if they had been free to move on schedule they would have reached their dispersal area.

One German battalion, for example, was reduced to two-thirds of its original number of motor transport. They had 14½-ton trucks which had not been completed on the assembly line, but which had an improvised chassis made out of wood and cardboard. Most trucks in use were of Italian origin and here again they were in a spot because it was almost impossible to get spare parts as the plants which produced them at Turin and Milan had been destroyed by aerial attack.

As CORONET accelerated its attacks, the reports of motor transport destroyed began to mount. In April, 20 vehicles would have marked a day of good hunting, less than 500 being the total bag for that month. We began to pass the hundred mark with increasing frequency in May, reaching a total of 2,700 for the month. By night and by day bombers and strafers were taking their heavy toll.

Enemy shipping, like land transportation, was soon forced to move at night and lie up by day. The bigger harbors were at first profitable bomber targets, but finally the fighters drew the assignment to hit both these and the smaller anchorages. They harassed unloading points at night whenever they could spot any activity and kept the Germans from getting their stores out of the way before daylight came and with it these fish-in-barrel targets.

All through the assault phase of CORONET, the steadily increasing pressure from both ground and air showed itself in the sense of urgency, if not of desperation, that began to appear in the enemy's movements. By their ever-increasing number as well as by their stories, prisoners confirmed the chaos and destruction which were cracking the German defenses. The Exploitation phase had begun.

The 24th of May, with more than 3,200 sorties and well over 3,000 tons of bombs on roads, railroads, supplies, trucks and tanks, marked the beginning of a period of relentless air pounding unprecedented in the MTO. When the break came, the fighters said in effect to the bombers, "You set 'em up and we'll knock 'em down." The bombers responded by creating road blocks in critical passes which forced traffic jams involving hundreds of vehicles that in turn became so many clay pigeons to the machine guns, cannon, and bombs of the Tactical Air Force.

Even the most sanguine airmen found it difficult to accept the reports of vehicles and equipment destroyed. But as the Army moved forward, confirmation came in the actual count by ground survey parties. For instance, over a short stretch of road near Forlì where the air claims totaled 117 motor transport and armored vehicles destroyed, the ground forces counted 122 blown up or burned out by air attacks. This corroboration, repeated many times, convinced even the most skeptical. An all-time high came on June 4 with 657 wiped out. The total for that month exceeded 3,000.

An example of one day's activity for one fighter group in MAAF is the account contained in the unit citation for the 86th Fighter Group. After Allied armies broke the 7-month stand at Cassino and plunged northward, powerful German forces attempted to reform on a line between Frascati and Tivoli where they proposed to stop the Allied advance short of Rome. On May 25 Tactical Air Force ordered the 86th Fighter Group to disrupt this strategic maneuver. "Taking off at 0650 hours on 25 May," the citation reads, "the first flight began a gruelling battle with enemy transports, diving through intense, accurate antiaircraft fire to bomb traffic, effect road blocks, and create confusion, repeatedly returning at minimum altitude to strafe the streams of enemy reconnaissance cars, personnel, carriers, trucks, tanks, and horse-drawn artillery moving to the rear. When the final four-ship flight landed that night at 2020 hours the 86th Fighter Group had, in 12 missions and 86 sorties, destroyed 217 and damaged 245 enemy vehicles, inflicted an unknown number of casualties on hostile personnel, silenced several gun positions, and interdicted the highways into the town of Frosinone, Cori, and Cescano. . . . This dawn-to-dusk aerial hammering, coordinated with the terrific assaults made upon adjoining areas by other units of the Tactical Air Force, so crippled the enemy's transport system and disorganized and decimated his ranks that he was forced to abandon his projected defense of Rome and hastily retreat northward to escape complete annihilation."

Taking full and immediate advantage of this breakdown of the German armies, General Clark's Fifth Army entered Rome on June 4 and 5 and shortly thereafter continued with the Eighth Army to move northward. This was the beginning of the

Sustained Offensive phase which resulted in steady progress to the general Pisa-Florence-Rimini line.

Since then, there has been little change in the employment of the tactical air forces in Italy. The object continues to be to hammer away at the enemy's supplies and make him incapable of withstanding the land attacks.

In terms of effort, operations STRANGLE and CORONET were expensive, totalling together, 137,949 effective sorties and the expenditure of 84,603 tons of bombs. For the 102 days from March 15 to June 22 this averages 1,352 sorties and 843 tons a day. In terms of aircraft losses, however, the campaigns were economical beyond hope. MAAF lost a total of 803 planes, or about one-half of one percent of total effective sorties.

CORONET has been discussed here from the air viewpoint but in doing so, it is not the intention to minimize the role of the ground forces. The battle is recognized as a well-coordinated operation involving clear responsibilities for land, sea and air. No airman believes that the air effort alone compelled the Hun to break below Rome and to keep withdrawing above Rome. It would be equally inaccurate to believe that the ground forces could have forced a determined German Army to withdraw from its superior defensive positions unless the air forces had strangled its flow of essential supplies, disrupted its movements and attacked its strong points on the battlefield.

CORONET was a synchronized assault - an outstanding example of mutual support. It is axiomatic that the success of combined operations depends upon the complete coordination between the services. The means adopted in the North African campaign to insure this has served this theater well.

Air, ground, and sea commanders are each independent but they are bound together by the common objective. At Army Group, Army, and sometimes Corps headquarters levels, they and their staff live, plan, and cooperate together. Without sacrificing independence or submerging individual identities, the team works like the fingers in a clenched fist.

This is the system, the formula for attack that grew up in the Desert Victory. It has survived and sharpened its striking edge in the Battle for Italy.



**combined
command**

COMBINED AIR COMMAND IN THE MEDITERRANEAN THEATER

1. The Mediterranean Theater is the war zone in which combined command has had its longest, most comprehensive and most consecutive history. This holds true both for coordinated efforts of combined air, sea, and land operations on the part of American and British forces and for combined operations of the United States Air Forces and the Royal Air Force. The success of these air operations, which include participation in four major amphibious landings and their subsequent ground support campaigns, sufficiently testifies to the harmonious and efficient direction maintained in this way.

2. This history of the combined air effort begins in November 1942. When the North African campaign began, Allied air forces in the Mediterranean fell into two separate entities. Air Marshal Coningham's predominantly R.A.F. Tactical Air Force was moving west from El Alamein; the other was the predominantly American air force which arrived with the landings in Algeria and Morocco. Air Marshal Coningham's Air Force was demonstrating without question the importance of having an integrated tactical air force which could act as a whole rather than having a number of scattered squadrons operationally tied to particular army or naval units. The air forces which arrived in the west contained a small number of R.A.F. squadrons and the U.S. Twelfth Air Force which was organized on the then-standard American pattern with Bomber Command, Fighter Command, Air Service Command, and Air Support Command.

3. The Casablanca Conference accepted the principle of unity of command. At that time the two air forces were rapidly converging in Tunisia and the problem arose as to how they could be merged, in view of the fact that R.A.F. elements were organizationally on an equal status with the several nations' Armies and Navies, whereas the U.S. air forces were subordinate to our Army. The Conference solved the problem by designating an R.A.F. officer as the Commanding Air Officer in the Mediterranean for operations.

4. This was further modified in February 1943 when the Northwest African Air Force, incorporating both American and British air forces in the western Mediterranean, commanded by General Spaatz, and a second air command in the eastern Mediterranean were created, and the two were linked under Air Marshal Tedder's Mediterranean Air Command.

5. With the creation of M.A.A.F., the principle emerged in its clearest form that function and not nationality were to determine the organizational pattern in this Theater. The result has been that, with the exception of the Balkan Air Force, all the major operational commands in this Theater contain elements from both U.S.A.A.F. and R.A.F., and in various commands, French, Yugoslav, and Italian forces.



casualties

Some Considerations Concerning
CASUALTIES, MORALE and the COMBAT TOUR

Which has the more dangerous assignment, the Air Force combat crewman or the Ground Force fighting man?

Increasingly, in recent months, as the progress of the U.S. and British infantry has been slowed by German resistance and counter-attack, the Press has built up the impression in the public mind that U.S. Ground Forces have a higher casualty rate and face greater hazards than do American combat flyers. This has disturbed Air Force combat crews primarily because they do not believe it is true and secondly because they feel that the public, in its current deep concern about the infantry, has tended to forget that the Air Force also fights grim and bloody battles almost every day.

In an effort to obtain an unprejudiced answer to the question underscored above, a comparison has been made in the Mediterranean Theater of Operations between casualties suffered by Air Force combat personnel and the combat personnel of the Fifth Army during the 15 months from 9 September 1943 to 3 December 1944. Considered as casualties were men killed, wounded, missing in action and prisoners of war, both combat and non-combat. Strength figures used for the Air included all personnel on combat flying status, and for the Ground all Fifth Army infantry divisions, field artillery brigades and tank groups. No combat support organizations were included in the strength figures used in calculating the casualty rate.

On this basis the Ground Force casualty rate for the 15 months examined was 6.33% per month. The Air Force rate for the same period was 7.69% per month.

Although these rates have a slight inaccuracy due to the fact that a small percentage of the casualties were among personnel in both Air and Ground Forces excluded from the personnel strength figures, the rates are representative and essentially correct. Comparative rates of this type will always be subject to criticism because of differences of opinion as to what Ground personnel should be included. Nonetheless, the evidence appears conclusive that the individual combat airmen faces a greater peril than the ground fighter, when we consider only those who are subjected to enemy action.

This in no sense cries down the ardors endured by the infantryman nor is meant to deprecate their magnificent courage and accomplishment. Also, of course, it must not be forgotten that total Ground casualties far exceed total Air because of the far larger number of Ground soldiers involved. Yet, Air casualties also have been quantitatively heavy -- 21,345 since the North African invasion -- and continue at a fairly constant rate as the detailed tabulation at the end of this paper reveals. The individual flyer's feeling of being neglected by the public is therefore readily understandable.

The public's attitude toward Air is also readily understandable. There is something about modern air bombardment that defeats comprehension by the average mind. Whereas almost any civilian can visualize the grim and gruesome agony of an infantry attack on enemy trenches, the equally terrific sensations of flying hundreds of miles into the heart of Germany in sub-zero cold, on oxygen, through forests of flak and shoals of enemy fighters, can only be dimly comprehended by those who have not experienced it. Also, of course, the fact that by February 1944 we had defeated the Luftwaffe and established our air supremacy everywhere in Europe has led the public automatically to the assumption that strategic bombing is now a relatively routine and "easy" operation. They fail to recognize that as the Luftwaffe has waned, German flak has waxed in scale and effectiveness.

The more Hitler's Europe is compressed by our invading armies the fewer become the vital targets left to air attack and the greater becomes the concentration of flak over them. More than 800 guns now guard the Brenner Pass, 600 the oil refineries in Vienna, 500 the city of Munich. In a typical three-month period last Fall 90% of wounds to American flyers in MAAF were from flak and but 10% from bullets. Thus, though the once deadly Focke-Wulf rarely attacks our formations today, the increased AA barrage has kept our casualty rates in the Mediterranean virtually unchanged since the days when the Luftwaffe was the major hazard. Aerial bombardment is not yet just a transport service with bombs as the cargo, but remains a grim, relentless struggle calling for all the qualities of steadfast bravery which our combat crews have always demonstrated.

That bravery has never faltered. If any fact is needed to prove it, the simple statement that U.S. flyers have never once been turned away from their target by enemy opposition should suffice. Air Force morale has always been high and remains so today. Unquestionably one of the reasons for the zest for fighting which characterizes AAF combat crews has been the policy of the "combat tour". Yet, here again, the public labors under some considerable misapprehensions about the Air war -- for the fact is that the fixed combat tour in the Army Air Forces was abolished a year ago -- in February 1944.

The policy that upon completion of a fixed number of missions, air crews would be relieved from combat was instituted in England in 1942 and was subsequently adopted in the Mediterranean. In those early days when replacements were few and air battles were at their climax such a policy was indispensable for the maintenance of morale and fighting efficiency. But the number of missions that made up the combat tour was always thought of as a flexible thing. There was never any promise that once his tour was done, a flyer would never have to fight again -- indeed, many of the B-29 crews now hitting Japan have already served one combat tour in Europe. But the idea began to get around, all the same, that completion of one operational tour meant that combat crews would not subsequently be sent back to an active theater. And so, in February 1944, with the Luftwaffe beaten down and Allied air supremacy won, the fixed tour was ended and replaced by a variable one subject to local conditions in the unit concerned.

See following page for tabulation of Army Air Force casualties in the Mediterranean since the invasion of North Africa.

ARMY AIR FORCE BATTLE CASUALTIES IN THE MEDITERRANEAN

8 November 1942 - 31 December 1943

	<u>KILLED</u>	<u>WOUNDED</u>	<u>MIA & POW</u>	<u>TOTAL</u>
8 Nov. 1942 - 31 May 1943	277	406	750	1,433
1 June 1943 - 30 Sept 1943	167	326	877	1,370
1 Oct. 1943 - 30 June 1944	1,723	1,447	6,580	9,750
1 July 1944 - 31 Dec. 1944	<u>1,369</u>	<u>1,407</u>	<u>6,016</u>	<u>8,792</u>
TOTAL	3,536	3,586	14,223	21,345

MIA & POW figures are net and account for men who have returned to Allied Territory.

Combat Crews Killed, Wounded and Missing in Action

Per 1,000 Pilot Sorties Flown

(Moving six months average through current month)

	<u>B-17</u>	<u>B-24</u>	<u>P-38</u>	<u>P-51</u>	<u>B-25</u>	<u>A-20</u>	<u>P-47</u>
Sept. 1943	4.675	17.535	11.206		3.886	2.512	
Oct.	4.752	17.204	10.137		3.409	2.874	
Nov.	6.156	18.687	8.632		3.026	3.064	
Dec. 1943	7.570	22.907	10.109		3.192	3.308	
Jan. 1944	7.526	19.952	12.287		3.462	2.052	
Feb.	11.326	20.200	12.586		3.556	2.369	
Mar.	14.007	16.447	11.719		3.938	3.083	2.678
April	14.431	18.524	10.749		3.328	2.200	2.086
May	13.148	15.344	11.280		3.316	2.088	3.348
June	12.931	15.080	12.436	9.768	3.399	2.292	3.767
July	16.562	16.403	11.826	8.429	2.813	3.164	3.538
Aug.	13.173	15.172	11.577	7.346	2.383	3.044	3.623
Sept.	12.112	14.190	11.559	7.090	2.437	2.462	4.139
Oct.	11.646	13.508	11.652	7.812	2.648	3.431	4.390
Nov.	11.560	13.634	11.307	7.934	2.846	4.689	4.406
Dec. 1944	11.721	14.221	8.164	7.246	2.820	4.809	4.269



**what the Germans
are saying**

WHAT IS THE GERMAN SAYING?

No source of intelligence is more fruitful than the statements made by Germans themselves. Photo Interpretation, analysis of Captured Documents, the inspection by technicians of Captured and Crashed Aircraft, Intercepted Letters - all these give valuable information to the Intelligence officer. But the most authentic answers can be found in what the Germans themselves are saying.

What is the morale situation?

How about oil?

What really happened to Rommel?

Have we cut the lines of supply?

How effective has our Tactical Bombing been?

The Germans themselves have answered these questions for us. Sometimes it is a tired young soldier - frequently an arrogant Nazi - other times a General - but whether a man from the ranks or from the High Command, the German prisoner talks and frequently talks freely.

Here is what the German is saying.

SOURCE: General, captured September 1944, France.

MORALE

German troops lost their nerve as a result of Allied air supremacy. When an aircraft came over the men were like frightened rabbits. The Allied bombing attack on BOULOGNE had been the very devil. An unending stream of bombers blasted a way into the town.

SOURCE: Information from General captured France, September 1944.

MORALE

The strength of the Air Force lies not so much in its ability to annihilate troops as in its effect on morale.

SOURCE: Fifty German prisoners reporting to the 5th Army Prisoner of War Cage, FLORENCE, October 1944.

MORALE

A large group of German prisoners was being questioned shortly after capture. The interrogator probed eagerly for any eye-witnesses of the heavy October raid on Bologna.

"On October 12th," he asked, "did any of you see a formation of several hundred planes headed for Bologna?"

A long silence ensued as the soldiers tried to fix the date in their minds. Finally a voice from the rear broke in:

"German or American planes?"

Instantly a gust of uproarious guffaws swept the prisoners. Minutes elapsed before interrogation could continue.

SOURCE: Prisoner of War captured near EPINARD, 14 October 1944.

MORALE

"The low flying attack is the horror of France.....nothing can stir on the roads."

SOURCE: Combined Services Detailed Interrogation Center Army report issued early summer 1944.

MORALE

German soldiers, returning from service on the Russian front, came back singing a parody on the popular German song "Lili Marlene", which runs as follows:

Auf der Strassen Russlands
Marschiert das Battalion
Alles was ist übrig
Von Greiners Division
Alle Leute sollen sehen
Wie deutschen Waffen
rückwärts gehen,
Wie eins Napoleon, wie eins
Napoleon.

On the roads of Russia
Marches a battalion
All that is left
Of the proud Greiner Division
All the people should behold
How German troops backward
march,
As once Napoleon, as once
Napoleon.

SOURCE: Ground Crew mechanic.

MORALE

"Our people in the Luftwaffe are slowly but surely becoming demoralized because they know that the enemy is always superior in numbers. We have so few machines in North Italy that it isn't safe to fly during the daylight hours any more."

SOURCE: German paratrooper from AACHEN captured six miles south of FLORENCE, 17 July 1944.

MORALE

"You will never win the war. It is impossible that Germany should ever give up. I myself have seen how 20 Germans have held off whole companies of Americans. And we have our V-weapons. Even your own papers admit the damage they are doing. And soon we shall bombard America."

SOURCE: Forty-eight year old German Lt. Colonel.

MORALE

"Because of the almost constant bombing of German cities the people expect defeat and, therefore, their morale is bad. Confusion extends even to the army. There is an increasing number of officers from the Hitler Youth who are too young to enforce discipline. Commanding Officers receive contradictory orders not only from their military superiors but also from the Gestapo. It came to the point where I could obey no one Gestapo order without disobeying another."

SOURCE: Corporal from LEIPZIG captured near FAENZA, Italy,
in December 1944.

MORALE

"Yes, that's very true. And Germany requires help from outside if she is to get rid of Nazism. Alone, we're too weak to do it. Everyone screams 'Heil Hitler', everyone feels himself too small to be able to do anything about it even if his convictions are the very opposite to National Socialism. But, I can tell you, I don't care a damn what happens, or which of the three Allies occupies LEIPZIG after the war, provided that I can once again be a free man and act, think and speak in freedom."

SOURCE: Infantry private captured at the ANZIO Bridgehead,
29 February 1944.

MORALE

"We shall go back some day. And whether it's a victory or a defeat for Germany, we're done for. Reading the German Press five months ago, you would have believed that our glorious retreat was merely a preparation for a new offensive, that the next morning we were going to land on the English coast and be in LONDON for lunch."

SOURCE: Captured German Lieutenant from a motorized infantry unit
on the Italian Front.

MORALE

"When one comes here from Russia one wishes one were back there again. When the 16th Armored Division was sent back to Russia every man shouted for joy."

SOURCE: Infantry Corporal captured at CASOLI, Italy, 20 July 1944.

MORALE

"A German soldier never retreats; no, he does an about-face and goes on marching forward."

SOURCE: Prisoner of war of the Medical Corps.

MORALE

"One thing one must say - you've always fought very fairly. You've treated our wounded marvellously, even better than we treat our own. I was amazed."

SOURCE: Lieutenant, 3rd Field Reinforcement Battalion, captured near ROME, June 1944.

MORALE

"The Minister of Public Health has recently brought out a law that old people who are ill and won't live much longer can be done away with. Lunatics in asylums are simply got rid of, too, because the Government can't see any sense in keeping the people alive. The most incredible things happen. Faked certificates are made out and names inserted for signatures - we have reached the point in Germany where a man can just be done away with like a criminal, without law coming into it at all. The idiots have even gone so far as to work out plans after the war for every man to marry two wives, because otherwise there would be too many spinsters. Polygamy like the Arabs. All we need now is exemption from work for the male population."

SOURCE: A human torpedoman captured off RIMINI, 1 October 1944.

MORALE

".....I'll do anything for Germany. You can shoot me, I am not afraid."

".....You'll probably torture us. The British Secret Service is known the whole world over and they have already murdered a number of people. It doesn't matter whether one more is killed or not. Quite a number have been killed already."

".....And if we are killed, then we die for the future of Germany. We don't do it for ourselves, but for those who come after us so that they can live as free people."

".....It would be a dirty trick if you torture us a long time. I would rather be shot straight away. And if you shoot me and offer me a first wish, then I'll ask for my German uniform. I won't be shot in civilian clothes. I want to die as a German soldier."

SOURCE: Anti-aircraft officer taken prisoner by a 5th Army patrol, 4 December 1944.

MORALE

"Why don't we see any of our planes? Because we don't have any! If you're in Russia you're told that the Air Force is in Italy; if you're in Italy, then you're told that it is in the West; and if you're in the West, then you're told that it is in Russia. I saw something of the situation. At BOLOGNA there were exactly 16 planes! It made my hair stand on end!"

SOURCE: German Air Force Corporal captured off ORAN, 12 July 1944.

MORALE

"If we had only a third of the machines you've got we should be all right. All we have left now is our 'iron will', and we can't fly in that. And think of all the things we've been promised about settling with the English and our retaliation weapons. Fortunately they've at least put out V-1 and V-2 now - if it hadn't been for that the nation would have lost all faith in a victorious end long ago. There's nothing we can do against the superiority of the Allies - although they fight very cautiously and always consider their men first. But production in America goes on entirely undisturbed so that the Allies can't help winning in the end, even if they only advance very slowly on every front. And of course our factories are bombarded day and night; we can't possibly keep step with them. But the Fuehrer is an idealist - I think he'd rather shoot himself than escape to a foreign country when the end comes. That's to say, if he lives to see the end."

SOURCE: A German Air Force Corporal taken prisoner near VANITSA, Greece, 4 November 1944.

MORALE

"Yes, if you Americans hadn't come into the war it would have been all over by now. Still, we must admit that you are our only hope; with your help we may get some peace, the other opponents will never allow Germany to rise again. We shall have to thank America for whatever little we are left with and whichever rights are granted us after the war. As a prisoner of course one doesn't lose too much sleep over Germany's difficulties."

SOURCE: A Lieutenant Colonel of the German Army.

MORALE

"I can tell you that I'm glad to be out of it, and in an honorable way which doesn't discredit me as a soldier. I'd had enough of it a long time ago. The very thought of my responsibilities at CASSINO is enough to turn my hair grey. I'd rather shoot myself than do anything like that again. Sooner or later I shall appear before an American court martial to answer for my share in the business, on account of what happened to the monastery alone. Well, I was only doing my duty as a soldier, fighting for my country. I was ordered by Heilmann to hold the Monastery. I shouldn't like to stand together with him in the dock. But I shan't try to defend myself; I know that you won't punish me, for I'm a soldier and an officer. I'm certainly not afraid. And then there will be all sorts of books and documents written about it; why, I shall become quite a famous man!"

SOURCE: Prisoner who managed the Receiving and Shipping Department and the motor pool of the Deutsche Lufthansa main workshop.

FUEL

From the prisoner's account, it appears that control of private motor transport has been pushed to a point beyond which regulation actually decreases efficiency. If the Berlin area is a fair example, conversion of private transport to gas generator was practically complete by August 1944. To insure maximum efficiency the government set up a hierarchy of agencies; a local traffic authority was placed in control of all private transport, eventually including even horse-drawn vehicles. In 1942 the authorities placed at Lufthansa's disposal an Opel truck about 20-25 years old and allotted 180-200 liters a month for its operation. The allotment was reduced, first to 100-150 liters and then, early in 1943, to 50-100 liters. In the spring of 1943 no fuel was supplied for this vehicle. It was left with the Lufthansa to be operated at the firm's discretion on fuel diverted from the allotment for company-owned transport. By the end of the year, the Lufthansa could spare only ten liters a week, and six months later, no fuel at all was available for the Opel.

SOURCE: German Air Force Sergeant, an anti-Nazi who served as clerk at Headquarters of Luftflotte 3 and later at Headquarters of the German Air Force.

FUEL

Early in 1943 Hitler began to complain that the German Air Force was carrying out very few operations on the Russian front, and he was told that shortage of fuel was the reason. In the same month a conference was held at BERCHTESGADEN and prisoner of war understood that Keitel produced a statement showing that German fuel production from all sources for the year ending June 1944 amounted to only one-seventh of that of the previous year. Conferences at BERCHTESGADEN on the fuel situation lasted an entire week and prisoner of war was told that Hitler was very upset during the whole of this period. Supplies were allocated to the German Air Force on a strict rationing basis; all but the most essential aircraft courier flights were immediately stopped and training was drastically reduced. In addition, Keitel demanded, above all, increased flak and fighter protection for the synthetic oil plants.

SOURCE: German Infantry Pfc from LEIPZIG captured near BOLOGNA 8 November 1944.

FUEL

Prisoner of war stated that on his furlough (May 1944) he learned that in the last attack on the BRABAG synthetic oil refinery at BOHLEN as many workers were drowned in floods of oil as were killed and injured by the bomb explosions.

SOURCE: German Document - Orders for Conservation of Motor Fuel
by the Wehrmacht.

FUEL

Motor fuel is an instrument of command. Higher and lower commands must give the greatest attention to the motor fuel problem and, in view of the seriousness of the motor fuel situation, order all necessary steps for saving it. That any failure to carry out this order is of decisive importance for the war and that disobedience is sabotage must be known to every soldier. Whoever uses gasoline for journeys other than those directly aiding the prosecution of the war, is committing sabotage and will be subject to severe military discipline.

On the trip permit the purpose and military importance of the journey must be clearly set forth and it must be shown that the trip cannot be made by railway or other vehicles or means of transportation. The officer who signs the trip permit assumes the responsibility for the importance of the vehicle's trip.

(a) Departure from the Divisional area with a car is subject to consent of the Divisional Commander.

(b) Departure from the Corps area with a car is subject to consent of the Commanding General.

(c) Departure from the Army area with a car is subject to consent of the Army Commander.

(d) Departure from an Army Group area with a car is subject to consent of the Commander of the Army Group.

(e) Departure from the areas otherwise organized, staffs and service headquarters, which are not subject to the commands included under (a) to (d) is subject to the consent of a commanding officer equivalent in rank to at least a Divisional Commander.

One condition is full utilization of all space. When this is not the case, the reason for the exceptionally small loading of the car must be stated in due order on the trip ticket.

It must be the fundamental principle that on all journeys, the smallest vehicle and that which consumes the least fuel must be employed.

For transportation, the Army may also use horses, bicycles, and its own feet.

Endorsement to the above order:

I have ordered the strictest checks and in the future in the case of journeys of unmilitary necessity, I shall

(a) Have the vehicle seized.

(b) Have its occupants immediately assigned to an infantry unit for transfer to the Vosges Front.

GEN. BALK.

SOURCE: German Gefreiter (Pfc) captured south of BOLOGNA,
25 October 1944.

PROPAGANDA

Prisoner of war states that everyone in his unit, including the Oberleutnant (1st Lieutenant) read American leaflets. Most men believe them because men returning from furlough substantiated the truth of some of the items contained therein. Moreover, they were the only source of news they had. They swapped them with each other and the Oberleutnant was angry if he missed one. Prisoner of war states that one of the best things about the leaflets is the regularity with which they arrive.

SOURCE: German armored force sergeant captured in November 1944.

PROPAGANDA

"The Germans are bleeding to death for a lost cause. Some of them fight on because of the propaganda concerning the enemy. The people are repeatedly told that Americans are cruel and will make slaves of the Germans if they once occupy the country."

SOURCE: A 32-year old infantry Corporal from the TYROL.

PROPAGANDA

"The propaganda you people here put out should be much more forceful. You should get your pilots to fly over our lines and write in the air 'Where is HITLER?'"

SOURCE: German Air Force Sergeant, 12th Company, 3rd Paratroop Regiment, captured at OSTE ALATRI, 2 June 1944.

PROPAGANDA

"I don't believe it - you're from the Air Force, too; how is it possible to make 13,000 sorties? That's nonsense - you would have destroyed the whole of France by now. And as for the thousands of smaller craft - I suppose you've got barges and canoes among them, and probably counted the life-boats, too. But 4,000 ships - that's really impossible. Look at DIEPPE - you had about 80 or 100 ships - how can you have 4,000 now? I can't believe it. I should like to listen to the German radio now, and if they said there were 200 ships, against your version of 4,000, I might perhaps believe the Allies had about 1,000. Just think, 4,000 ships and 13,000 sorties - you haven't got so many airfields to take off from in one night. You haven't flown 13,000 sorties over Germany during the last four years of war, let alone in 24 hours."

SOURCE: An 18-year old native of VIENNA who had just finished his ground training but had had his transfer to a school continuously deferred until his capture in Southern France about 21 September 1944.

TACTICAL

".....Very successful, especially against small targets. The Lightnings (P-38) are particularly feared. Even if no damage is suffered the sudden appearance of the planes causes such panic and resultant disorganization and delay that the effort can be considered worthwhile for that reason alone. The frequency of these attacks and the complete absence of the GAF caused many of the soldiers to wonder about the veracity of their propaganda, which has been seriously doubted ever since the V-1 (flying bomb) failed to live up to expectations."

SOURCE: An Austrian deserter. Statement made 11 September 1944.

TACTICAL

(Reference is to ground strafing in Southern France.) "The entire column was in chaos. At first orders couldn't be heard or were not heeded if they were heard. Few men were killed outright, but there were many wounded. Not more than 15% of the vehicles got through undamaged. There wasn't a man among us who wouldn't prefer a month in front line trenches to one of these attacks."

SOURCE: Twenty-three year old Italian engineering student, captured in November 1944.

TACTICAL

"Your bombing of MODENA has knocked out the station and marshalling yards and put the CORNI Foundry, the O.C.I. Fiat plant and the main tobacco factory out of business. This last item made the civilians very unhappy for the Germans had already walked off with most of our tobacco."

SOURCE: A Luftwaffe ground-crew Sergeant, captured 18 October 1944.

TACTICAL

"Our withdrawals in Italy were always a fearful shambles. At half-past four in the morning you had to start thinking about taking cover, because the first fighters used to start appearing about then. If you had seen our withdrawal in Italy, you would have said that it was plain madness to go on with the war. We always traveled at night and rested during the day. You were never safe from the bombers in the daytime. I haven't seen any German fighters since June. Everything moving on the roads used to be shot up. They even had to use horses to pull tanks, because of the shortage of petrol, so as not to leave them."

SOURCE: Captured German Document - Reference: 19 Air Force Field Division, Order No. 40, Division Headquarters.

TACTICAL

Enemy aerial reconnaissance detects our every movement, every concentration, every weapon, and immediately after detection smashes every one of these objectives. This is accomplished by a close coordination of Air Force and Artillery. Every soldier must be made to realize that the enemy's present superiority in the air is not of temporary duration - subject to time and location - but rather that it is a part of a permanent set of conditions that must be faced by our troops. Experience demonstrates that the enemy knows how to reconnoiter and destroy our every concentration. Every weapon detected by the enemy is destroyed by coordinated fire, directed by his OP's. The enemy can conduct his artillery reconnaissance observation completely unhindered. Every vehicle must post an air look-out. The best means of locomotion for individuals, as well as whole units, is the bicycle. To find appropriate cover with lightning speed, practice is necessary. More than ever before, units must be trained fully to master the art of camouflage. It is not enough that soldiers know how to attach grass and twigs to their helmets. Complete camouflage of men and material is required.

SOURCE: Port Commandant, captured September 1944, France.

TACTICAL

The Allied success in France is mainly due to air superiority; the troops could not stand up to the Allied "carpet bombing".

SOURCE: Report of Combined Services Detailed Interrogation Center, Air Section - From a cook in a mobile unit.

TACTICAL

"Sure, I've seen plenty of strafing. The equipment loss is the greatest. One could say that strafing and low-level bombing of our roads is a direct attack against our supply organizations and because your planes won that phase of the war in southern France, they won the battle of France itself."

SOURCE: An Artilleryman captured at MACERATA, Italy, 21 July 1944.

TACTICAL

"With all your tanks against us, it is a sad state of affairs that we have to come along with our horse-drawn guns and six rounds a day to be fired only on the authority of the divisional commander."

SOURCE: German Document captured on the 5th Army Front in Italy.
This Document had been issued by Supreme Command, Army
Group B.

TACTICAL

Enemy No. 1 is the hostile air force, which because of its absolute superiority tries to destroy the spearheads of our attacks and our artillery through fighter-bomber attacks and bomb carpets and to render movements in the rear areas impossible. The armament industry at home and the High Command are trying with all possible means to render ineffective, for the time being, this air superiority, at least for the purpose of supporting our actions. During this time of the year our attacking troops profit by fog and the danger of icing of the aircraft. Everywhere the troops will employ camouflage, and at every halt they will dig in deeply (troops, weapons and vehicles).

SOURCE: Twenty-two year old deserter from an anti-tank company
captured near BOLOGNA in November 1944.

TACTICAL

Prisoner: "Our greatest fear here in Italy was your aircraft; it was impossible to move about behind the front during the daytime. We could only do it at night. The assault guns pulled out and we were left with only anti-tank guns. Sometimes the Americans would concentrate all their fire on one particular gun of ours, but the first round was quite sufficient. You were very accurate in your shooting. If it wasn't the first round, then the second would be a direct hit. Apart from that you also had your spotter planes circling round at about 50 meters."

Interrogator: "Didn't you fire at them?"

Prisoner: "Yes, but quite suddenly two of them would turn up and give you a burst of machine gun fire and then disappear. Later twelve fighters and two recon planes would appear and you wouldn't know where to turn first. If we had shot at them it would have been the end of us. All we could do was to take cover. The American planes were out to disorganize our supplies and they made a good job of it, too. If one of our vehicles so much as moved it would be shot to smithereens. We hadn't received any ammunition or food for weeks toward the end. We never engaged any single planes - they would have just riddled us with cannon fire. You had an air force, but we never saw a single one of our own planes."

SOURCE: Air Ministry Weekly Intelligence Summary No. 272.

TRANSPORTATION

Travellers from Southern Germany tell of unusually long delays in railway traffic caused by the air attacks. Express trains frequently have to stop for several hours in the middle of the line, or are unable to go on because the tracks have been destroyed. Since the beginning of this week traffic to STUTTGART has been completely suspended; journeys which normally take a few hours now often take several days because passengers frequently have to get off between stations and continue for several kilometers on foot to catch the next train. Passenger traffic operates mainly in the day, while goods traffic is confined almost exclusively to the night because darkness is to a certain degree a protection against attacks from the air."

SOURCE: Prisoner of war captured by 8th Army, 17 November 1944.

TRANSPORTATION

Railroad transportation in Germany and Northern Italy has been so disrupted that it recently took a German prisoner of war eleven days by train to cover an airline distance of 600 miles. The prisoner of war left SCHWERIN (east of Berlin) 28 October 1944 and did not reach his destination until 8 November. At the Po River he transferred to bus, ferried across, and continued to LUGO and FORLI.

SOURCE: German Corporal, who deserted near SOCLA, Italy, 23 November 1944.

TRANSPORTATION

In September it took a German infantry unit 9 days to go by train from VERONA to GENOA (an airline distance of 130 miles). The train moved only by night. During the day it waited in a tunnel. Often there were two or three trains waiting in the same tunnel.

SOURCE: German prisoner of war captured 1 November 1944.

TRANSPORTATION

As of the end of September 1944, it took a German infantry unit between 12 and 13 days to go by rail from VERONA via MILAN, a distance of 186 railroad miles. Blasted bridges were the main source of delay.

SOURCE: German Armored Force Private captured Southeast of BOLOGNA, 23 October 1944.

TRANSPORTATION

In September 1944 it took a German armored force unit - travelling without heavy equipment - seven days to go by rail from MUNICH to VERONA, an air line distance of 194 miles. Route followed: MUNICH, ROSENHEIM, WOERGL, INNSBRUCK, BRENNER PASS, VERONA. Unit waited 1½ days in marshalling yards at WOERGL.

SOURCE: Effects of Allied Air Raids on Rumanian Railroad System 4 April - 18 August 1944. (Memorandum prepared by the Rumanian General Staff on request of a member of the Research and Analysis Branch of the OSS.)

TRANSPORTATION

During the period 4 April - 18 August 1944, the following railroad equipment was damaged by air raids in Rumania:

157	locomotives
619	passenger cars
3,010	goods cars
1,525	tank cars
10	automotors

The repairing of the above equipment required 7,669,900 labor-hours, which in comparison with the total working capacity of the State Railway Workshops, represents a percentage of 26.6%.

SOURCE: German prisoner of war, Gefreiter (Pfc) captured 29 November 1944.

TRANSPORTATION

"Gasoline, war's greatest weapon, is almost gone. Even the vehicles for transportation of troops are horse-drawn. Only high ranking officials use motor transport. Soldiers march miles a day in the endeavor to save what gasoline is left."



SOURCE: A Corporal of a Rifle Regiment captured at CESENA,
19 October 1944.

SS

"In the end it will come to a showdown between the Army and the SS throughout Germany. But only right at the very end. The SS are nothing but political criminals shoved into uniform."

SOURCE: A German paratrooper is disappointed.

DECEPTION

"I tried hard to get away before I was finally taken prisoner. We had a number of Red Cross flags in the platoon and when things were looking bad we put Red Cross armbands on and kept waving the flags, but they wouldn't fall for it and so we were captured. I was very disappointed. Lots of others have worked this trick."

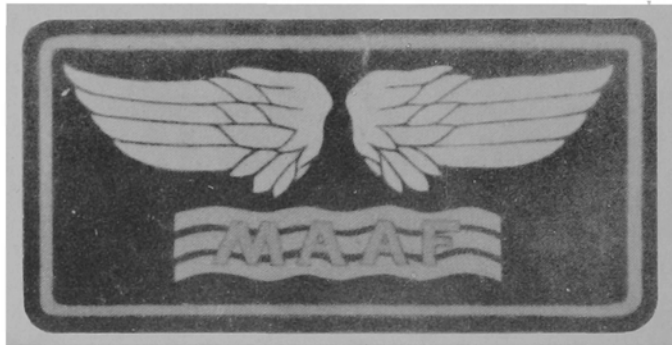
SOURCE: German officer during interrogation by British
and American Army officers.

ROMMEL

"I know Rommel very well. I had half an hour's conversation with Rommel in hospital. I shall never forget Rommel's last words to me. When I left, he shook hands with me and said, 'Hesse, I think it's a good thing that I was hit on the head.' Rommel sustained a so-called two-sided fracture of the base of the skull, with a 9 cm. gaping wound in the skull which was just beginning to heal. He was able to get up again after six weeks. Then the muscle of one of his eyes had been shot through so that the lid hung down."

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