

SECRET

AUTHORITY: COMMANDING GENERAL, USSTAF. INITIALS HAS DATE: 2-4-44

**UNITED STATES
STRATEGIC AIR FORCES
IN EUROPE**



**AIR INTELLIGENCE
SUMMARY No. 21**

For Week Ending 2 April, 1944

INCLUDING INDEX TO NOS. 11-20

COPY NO. 38

TO BE SAFEGUARDED CAREFULLY AND NOT TO BE TAKEN INTO THE AIR

SECRET

**GERMAN AIR FORCE
ORDER OF BATTLE**

Week Ending 2 April, 1944

WESTERN FRONT

SEF	845
TEF	765
LRB	450
GA & FB	30
RECON	190

S. GERMANY AND AUSTRIA

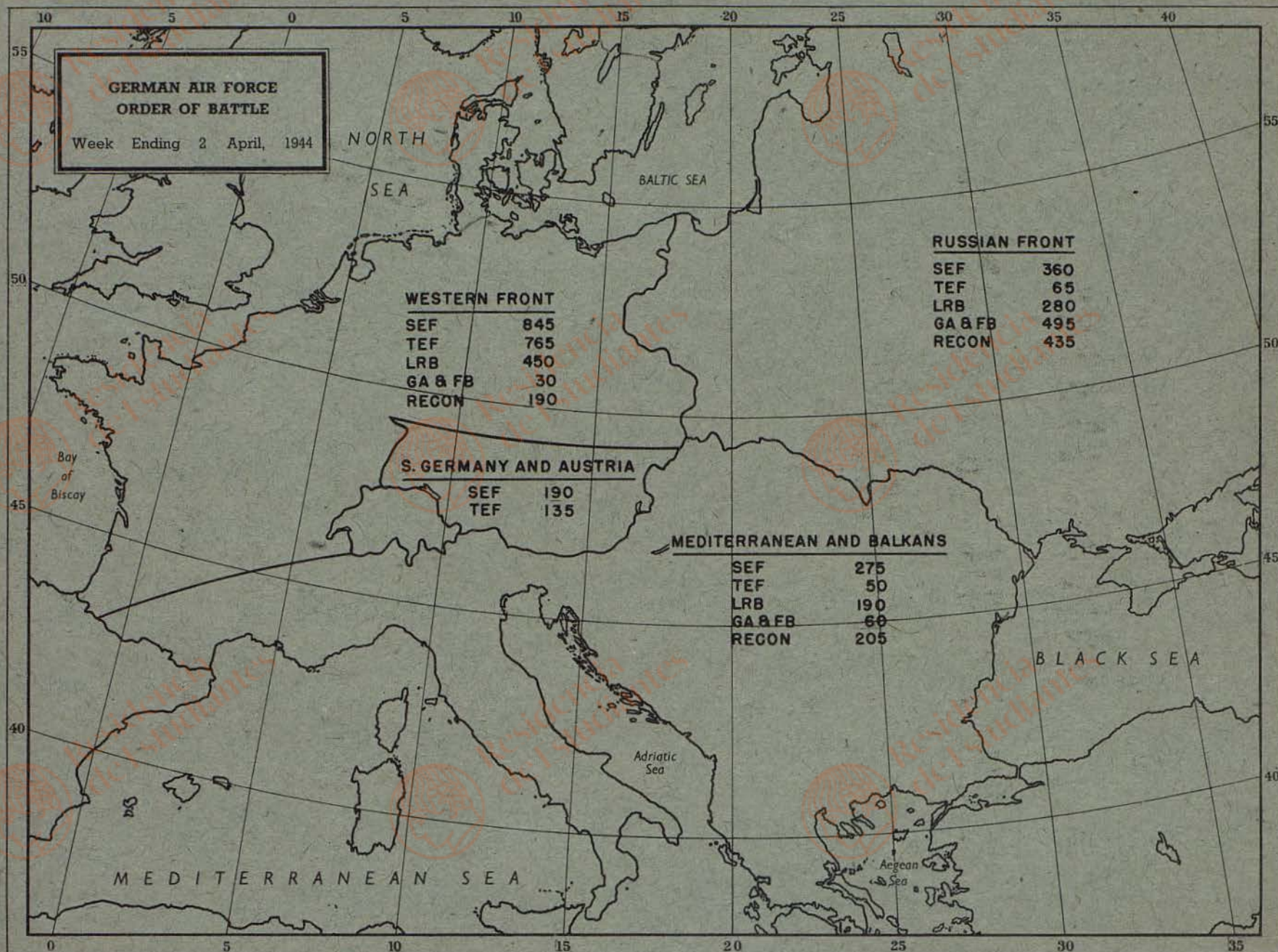
SEF	190
TEF	135

MEDITERRANEAN AND BALKANS

SEF	275
TEF	50
LRB	190
GA & FB	60
RECON	205

RUSSIAN FRONT

SEF	360
TEF	65
LRB	280
GA & FB	495
RECON	435



SECRET

TO BE SAFEGUARDED CAREFULLY AND NOT TO BE TAKEN INTO THE AIR

United States Strategic Air Forces in Europe

AIR INTELLIGENCE SUMMARY

No. 21 — Week Ending 2 April, 1944

PUBLISHED 4 APRIL, 1944, BY OFFICE OF THE DIRECTOR OF INTELLIGENCE

GERMAN AIR FORCE ORDER OF BATTLE

General Situation: German Air Force dispositions on both the Mediterranean and Russian Fronts have shown little change during the past week. In the Mediterranean the position has been almost completely static and in the East the German High Command still shows no intention of calling up additional support from the Air Forces to stop the Soviet advance in the south.

On the Western Front, however, there have been unusually large number of movements among both single and twin-engine fighters, all of which seem to be directed towards strengthening the defenses of the sections of the Reich which are most immediately under concentrated attack by day and night bombers. Heavy concentrations of single-engine day and night fighters have been assembled in the Frankfurt area, and it would appear that although southwestern Germany, and especially Frankfurt, has recently come in for day and night blitzing on a devastating scale, the Germans feel that there is still a great deal to protect in that sector (which is the home of great precision industries) and have strengthened the defenses accordingly. Further confirmation is given by the sudden large increase of twin-engine night fighter strength in Eastern France and Belgium, which lies along the direct route to South Germany. It would certainly appear that an all-out use of these forces was made during the RAF attack on Nuremberg of the past week, when 94 bombers failed to return.

In order to accomplish the strengthening of the night-fighter defenses in Eastern France and Belgium, however, strength of this type in Holland has been reduced by a third and in Denmark by two-thirds, leaving but a single Staffel of twin-engine night fighters in the latter area.

South Germany and Austria, which contain very much the same sort of industries as the area referred to above, are also in a much stronger defensive position, as they have gained two Gruppen of single-engine night fighters—a type of unit which the Germans are making every effort to expand at present—as well as an additional Gruppe of twin-engine day fighters. This raises the combined fighter strength of all types to 325 on this front. It is noteworthy that the Berlin area has contributed a Gruppe of single-engine night fighters for the defense of other sections of the Reich.

Western Front Disposition: Single-engine fighter establishment is estimated at 845 aircraft, an increase of ten during the past week. Of this total, 635 are day fighters and 210 are night fighters.

There have been a large number of changes in disposition but these have not greatly affected the strength by general areas. The principal development of the week is the very great fighter strength which has been built up in the Frankfurt area, where there are now two full Gruppen of night

Western Front Disposition by Areas

	SEF	TEF	FB	LRB	RECON
WESTERN FRANCE	65	35	—	90	90
EASTERN FRANCE and BELGIUM	55	180	30	90	10
HOLLAND	60	70	—	—	10
N. GERMANY (N. of 49°)	610	460	—	260	5
DENMARK and NORWAY	55	20	—	10	75
TOTAL	845	765	30	450	190
SOUTH GERMANY and AUSTRIA	190	135	—	—	—

SECRET

fighters and at least one, and probably two, Gruppen of day fighters, plus a third Gruppe already based at Wiesbaden nearby—making a total of up to 150 single-engine fighters in the immediate vicinity. Fighter strength in the Ruhr area has increased by half a Gruppe during the past week with a large concentration presently based on fields near Rheine. An additional 30 fighters have been identified near Stendal, between Hanover and Berlin. Present disposition at fields and areas where changes have occurred is as follows:

VOLKEL	None
DEELEN	15
TWENTE ENSCHEDE	Up to 30, but no positive estimate can be given
RHEINE and area	95
DORTMUND	None
STENDAL Area	40
BERLIN Area	30N
FRANKFURT Area	30-60 60N
UNLOCATED (believed in N. Germany)	95

Total twin-engine fighter establishment has declined by 40 aircraft and is now estimated at 765, of which 575 are night fighters and 190 are day fighters. A very great number of changes in night-fighter dispositions have come to light during the past week. The forces in Eastern France and Belgium have been increased by some 55 planes and now total 180, while that in Holland has been reduced from 100 to 70 and that in Denmark and Norway from 50 to 20. The reduction from 495 to 460 in north Germany is largely due to the withdrawal of a Gruppe of twin-engine day fighters which have gone to South Germany. Changes have occurred at the following fields during the past week:

ST. DIZIER	25
JUVINCOURT	25
FLORENNES	20
LAON/ATHIES	45
ST. TROND	40
GILZE-RIJEN	5
VENLO	15
LEEWARDEN	15

VECHTA	30
WITTMUNDHAFEN/ARDORF	None
SCHLESWIG/JAGEL	20
WESTERLAND/SYLT	30
PARCHIM	25
ERFURT/BINDERSLEBEN	None
OBER-OLM	60
WERTHEIM	None
GROVE	10
AALBORG	None
COPENHAGEN/KASTRUP	None

10/NJG 2 had gone non-operational from Gilze-Rijen.

There have been no changes in the strength and disposition of long-range bombers on the Western Front during the past week.

South Germany and Austria: Single-engine fighter strength has increased by 65 on this front during the past week, and now totals 190. Two full Gruppen of single-engine night fighters are known to have arrived in the Stuttgart/Munich area and the Vienna area, while the field at Graz is now known to be the base for a large number of day fighters. Present dispositions in areas where there have been changes are as follows:

STUTTGART/MUNICH Area	35N
MUNICH Area	None
VIENNA Area	10 30N
GRAZ	55

Twin-engine fighter strength has increased to 135 with the addition of a Gruppe of day fighters at Munich. There are now 90 twin-engine day fighters and 45 night fighters in South Germany and Austria. III/JG 27, which until recently has been operating exclusively in the Balkans and Greece, is now based partly on this front. I/KG 51, which has been operating on the South German front with Me-410s, a twin-engine fighter unit, is now non-operational.

Mediterranean and Balkans: There is little of interest to report from the Mediterranean area this week. The single-engine fighter situation has not changed either in overall total, which remains at 275, or among the various sectors which have also been static. Photo reconnaissance on 29 March showed 23 Me-109s on Nis Airfield

Mediterranean and Balkan Dispositions by Areas

	SEF	TEF	FB	LRB	RECON
SOUTH FRANCE	—	10	—	115	30
ITALY	195	—	60	75	70
YUGOSLAVIA and ALBANIA	30	—	—	—	20
GREECE, CRETE and DODECANESE	10	10	—	—	75
RUMANIA and BULGARIA	40	30	—	—	10
TOTAL	275	50	60	190	205

in Yugoslavia. In Sofia the following day 34 Me-109s plus 13 other SE fighters were seen.

The fighter unit which recently moved down to Italy from Northern France has now been identified as I/JG 2. This Gruppe, which was one of the first on the Western Front to defend Occupied Europe against the attacks of American heavy bombers, was probably sent south because of its long experience in this type of work, to increase the effectiveness of the German fighter defenses against the recent greatly-increased American bomber offensive from Italy.

There has been a decrease of about 20 long-range bombers, withdrawn from Italy, leaving a Mediterranean total of 190, of which 75 are still in Italy and 115 in Southern France. I/KG 76 has been withdrawn to non-operational status from Italy, and the Geschwader Stab and III/KG76 have taken its place in that theater.

Russian Front: German aircraft strength by types on the Eastern Front is as follows:

SEF	360
TEF	65
LRB	280
GA & FB	495
RECON	435

The only noteworthy change on this front has been the withdrawal of some 20 single-engine night fighters which have been based in the Helsinki area, leaving a token force of one Staffel. The 20 that were withdrawn have probably been sent back to their original base at Hamburg; see SUMMARY No. 20 (page 2).

ENEMY OFFENSIVE ACTIVITY

Western Front: During the past week, the enemy attempted only one large-scale effort against the United Kingdom. On the night of 27/28 March, long-range bombers and fighter-bombers engaged in a two-phase operation; the first was by some 150 long-range bombers, of which 110 made landfall, crossing the coast between Falmouth and Portland Bill, and operating over the southwest. The second phase consisted of 15 fighter-bombers, of which ten crossed the coast, operating in a diversionary action over the coastal area between Folkestone and Hastings. Activity during both phases was scattered over the whole of Southern England, from Weston-super-Mare to Hastings; nowhere was any degree of concentration attained, or any serious damage caused. First aircraft made landfall at 2325 hours, and the country was clear by 0010. Night fighters claim eight destroyed; AA two.

Night of 30/31 March, the first of twelve enemy aircraft involved in a two-phase operation made landfall at 0325 hours in the Haywards Heath-Horsham area, followed by the remainder in

the areas of Kent, Sussex, Surrey and Greater London, having approached the south coast under cover of returning RAF bombers. The hostile aircraft dropped bombs at a few points, causing only slight damage and a few casualties. They returned over the Kent-Sussex coast at 0355 hours, and all activity had ceased by 0405 hours. Five enemy aircraft operated during the second phase, the first one making landfall off the east coast between Spurn Head and Cromer at 0440 hours. Bombs were dropped at Bodiam, Eastbourne, Oxshott, Woolwich, Weatheringham, Thrope Abbott and Thurleigh. The country was clear by 0505 hours, the enemy aircraft returning in the direction of Holland, and all activity had ceased by 0530 hours.

Mediterranean: The enemy's effort during the week was directed against Allied shipping and to providing close support in the battle areas in Italy. On 27 March, 30 FW-190s attacked ships at Anzio, followed by 32 FW-190s on the 28th. During the night 28/29 March, about 30 enemy aircraft bombed Vis Island, in the Adriatic, inflicting some damage and causing a few casualties. On the night of 29/30 March, about 16 torpedo-carrying Ju-88s and He-111s and Do-217s carrying glider-bombs attacked an Allied convoy off Algiers. No damage was caused. Normal reconnaissances were flown during the period.

GROUND DEFENSES

Disposition: Additional changes in the location of heavy flak in Germany and the Occupied Countries, not included in the March 1st estimates of totals, are as follows:

Location	Total Mar. 1	Inc. or Dec. in Hvy. Guns		Percentage Inc. or Dec.
Germany				
Karlsruhe	48	+ 4		+ 8%
Lechfeld	Hvy. Def.	Total : 15		—
Nuremberg	144	-25		-17%
Rostock	68	+ 5		+ 7%
Wuppertal-Solingen	96	- 5		- 5%
France				
Brest Area	120	-12		-10%
Chartres	8	+ 2		+25%
Creil	16	-12		-75%
La Rochelle...	48	-12		-25%
Neufchatel	12	+16		+133%
Oisemont	12	+ 6		+50%
Pau/Pont Long	0	+ 6	New Def.	
Pauillac	12	- 6		-50%
St. Nazaire	68	+ 7		+10%
Valognes	68	-17		-25%
Watten	36	-16		-44%
Holland				
Hengelo	0	+ 5	New Def.	
Italy				
Piacenza	0	+ 8	New Def.	
Norway				
Lista	16	+ 4		+25%
Kristiansand S.	20	+ 8		+40%

Significance : *Germany :* The decrease in the defenses at Nuremberg, prior to this week's RAF attack, indicates a lowering of relative importance of manufacturing installations there.

France : The moving of operational single-engine fighters from the airfield at Creil would seem to be the reason for the considerable decrease in heavy defenses there. The respective decrease and increase of heavy guns at La Rochelle and Pau/Pont Long airfields indicates decreasing and increasing importance of single-engine fighter training facilities at the two locations. Invasion precautions are evident at Neufchatel, with the possibility that the guns were drawn from the Cherbourg (Valognes) area. There has also been some switching of defenses at Watten and Oisemont both of which are included in the area of special military targets. The decrease at Pauillac is possibly due to the movement of blockade runners.

Italy : Piacenza Airfield has undoubtedly come into use for fighters and reconnaissance aircraft which operate over the Italian battle area.

Norway : The increased heavy defenses of the airfields at Lista and Kristiansand South indicate a corresponding increase in the numbers of fighters for the protection of coastal shipping, and may be the result of recent anti-shipping attacks by British aircraft.

USSTAF OPERATIONS

27 March : *Eighth Air Force :* 539 B-17s and 168 B-24s, escorted by 358 P-47s, 132 P-38s, 122 P-51s of Eighth Air Force and 305 P-47s, 43 P-51s of Ninth Air Force, were dispatched. 74 B-17s dropped 171 tons HE, 36 tons IB on airfield and 35 B-17s dropped 107 tons HE on aircraft factory at *Tours*; 67 B-17s attacked *Chartres Airfield* with 198 tons HE; 55 dropped 165 tons HE on *St. Jean D'Angely Airfield*; 117 bombed *Cazaux Airfield* with 227 tons HE, 42 tons IB and 2 tons frag clusters; 124 dropped 210 tons HE, 84 tons frag clusters on *Bordeaux/Merignac Airfield*. 72 B-24s attacked *Pau/Pont Long Airfield* with 115 tons HE and 68 tons IB; 47 dropped 63 tons HE, 74 tons frag clusters on *Mont-de-Marsan Airfield*; 49 dropped 52 tons HE and 78 tons frag clusters on *Biarritz Airfield*; and 2 B-17s dropped 7.0 tons HE on targets of opportunity. 3 B-17s, 6 B-24s lost. Fighters claim 12-0-5 in air, 26-1-10 on deck for loss of 5 P-47s, 3 P-51s, 2 P-38s.

Fifteenth Air Force : 4 P-38s flew reconnaissance.

28 March : *Eighth Air Force :* 364 of 373 B-17s dispatched over airfields in France attacked primaries in clear weather, as follows: 61 dropped 150 tons HE on *Chartres Airfield*; 127 dropped 212 tons HE, 88 tons IB on *Chateaudun Airfield*; 117 dropped 225.5 tons HE, 86 tons IB on *Dijon/Longvic Airfield*; 59 bombed *Reims/Champagne Airfield* with 175 tons HE. 1 Fort lost. 284 P-47s, 123 P-51s and 46 P-38s on escort strafed *Dreux/Vernouillet, Dijon, Margny* and other air-

fields, claim 30-1-33 on ground, lost 3 P-51s. 77 B-24s dispatched over Holland were recalled because of weather.

Fifteenth Air Force : 457 bombers escorted by 178 fighters were dispatched on targets in Northern Italy; 110 B-17s and 97 B-24s, escorted by 51 P-47s and 63 P-38s, bombed marshalling yards at *Verona* with 561.5 tons; 176 B-24s, escorted by 48 P-38s, dropped 475.5 tons on *Mestre Marshalling Yards*; 3 B-24s dropped 9 tons on bridges near *Fano*; 3 further B-24s dropped 9 tons on *Cesano*, and 2 B-17s unloaded 6 tons on targets of opportunity. Bombers claim 3-0-2; fighters, 9-1-4 for loss of 3 P-47s, 3 P-38s. 4 P-38s flew reconnaissance.

By night, 72 Wellingtons and 6 B-24s were dispatched to attack *Milan*; 63 aircraft dropped 104 tons on marshalling yards at target; 3 aircraft dropped 4 tons on *Rimini Marshalling Yards*.

29 March : *Eighth Air Force :* 263 B-17s were dispatched to attack *Brunswick*; 193 dropped 113.0 tons HE, 283.0 tons IB on primary through 8 to 10/10 cloud, 18 dropped 9 tons HE and 28.4 tons IB on *Stedorf*; 20 dropped 10 tons HE, 31.6 tons IB on *Unterliss*. Bombers claim 9-5-4, lost 9. 242 P-47s, 146 P-51s, 50 P-38s on escort claim 44-4-13 in air, 13-7-14 on ground. Lost: 9 P-51s, 2 P-38s, 2 P-47s. In addition, fighters beat up 17 locomotives, three trains, one oil dump, numerous installations and enemy personnel. 30 B-24s of 77 dispatched on a military installation in *Pas de Calais* dropped 115.0 tons HE. 37 P-47s provided uneventful escort.

Fifteenth Air Force : 109 B-17s, escorted by 44 P-47s, were dispatched to attack *Turin*; 103 dropped 306 tons on marshalling yards. Lost: 1 B-17. Fighters destroyed 3 FW-190s. 155 B-24s dropped 412.0 tons on *Bolzano Marshalling Yards*; 131 B-24s dropped 326 tons on *Milan Marshalling Yards*. B-24s claim 7-2-0 for loss of 6. 98 P-38s on escort claim 3-1-6 for loss of 2 P-38s. 4 P-38s flew reconnaissance; 1 lost. By night, 76 Wellingtons and 8 B-24s were dispatched; 64 aircraft bombed *Sofia* with 133 tons; 1 dropped 2 tons on *Cesano*; 3 bombed a bridge at *Fano* with 6 tons. 1 Wellington lost.

30 March : *Eighth Air Force :* 24 Thunder-bombers dispatched over airfields in Holland; 12 released 2.75 tons HE on *Eindhoven Airfield*, 12 released 2.75 tons HE on *Soesterberg Airfield*. 24 P-47s on strafing mission attacked *Venlo Airfield*, claim 1-0-1; strafed 3 trains and marshalling yard at *Vierson*; destroyed a Do-217 on *Twente/Enschede*; strafed *Deelen Airfield*, damaging a Me-323. Other targets were strafed near *Coesfeld* and *Stadtholm* in Germany. Lost: 1 P-47. 6 B-17s dropped leaflets by night.

Fifteenth Air Force : 114 B-17s, 194 B-24s escorted by 96 P-38s and 24 P-47s, dropped 829.0 tons HE and IB on *Sofia*; several hours later

59 further B-24s unloaded 146.0 tons HE on target. Bombers claim 5-3-3; 3 B-17s, 2 B-24s lost. Fighters scored 8-1-33; 1 P-38 missing. 6 B-24s dropped 15 tons on targets of opportunity; 39 B-17s attacked *Imotski Airfield* (Yugoslavia) with 117 tons, 132 other aircraft dispatched were unable to bomb because of weather.

31 March : No operations.

1 April : *Eighth Air Force :* 245 B-17s and 195 B-24s were dispatched on Southwest Germany; adverse weather forced B-17s to return; B-24s flew off course, bombed targets of opportunity. 101 dropped 163.0 tons HE, 134 tons IB on *Pforzheim*; 17 unloaded 68.0 tons HE in *Strasbourg* area; 9 B-24s dropped 5 tons HE, 18 tons IB on *Grafenhausen*. 38 B-24s dropped 23 tons HE, 73 tons IB on *Schaffhausen*, Switzerland (near German border). Bombers claim 1-0-0; 10 B-24s lost. 232 P-47s and 195 P-51s on escort claim 5-1-4 in air, 5-1-17 on ground. Missing: 2 P-47s, 2 P-51s. 48 P-47s dropped 22 120-pound frag clusters on *Diepholz Airfield* and other targets; strafed *Rheine* and *Gutersloh Airfields*, transportation and enemy aircraft. Claims: 8-0-2 on ground; 0-1-0 in air.

Fifteenth Air Force : By night, 56 Wellingtons and Liberators dropped 70.75 tons on aircraft factory at *Varesi*; 15 Wellingtons dropped 33 tons on *Piombino*; 3 attacked other targets with 6 tons.

2 April : *Eighth Air Force :* No operations.

Fifteenth Air Force : Of 146 B-24s and 141 B-17s dispatched to attack ball-bearing plant at *Steyr*, 126 Forts and 131 Libs dropped 687.0 tons on the target; 156 additional B-24s of 190 dropped 251.0 tons on Daimler-Puch aircraft factory at target. Bombers tentatively claim 100-25-0; lost: 19 B-24s, 8 B-17s. Escort of 51 P-47s, 138 P-38s claim 20-5-0 with no loss. 29 B-17s dropped 87.0 tons on *Brod M/Y*; 28 B-17s unloaded 70 tons on *Mostar A/F*, 1 B-24 lost; 28 B-24s dropped 61.0 tons on *Bihac M/Y*; 2 lost.

ALLIED AIR FORCES

Western Front : During the past week, RAF Bomber Command's major effort was over Nuremberg; night of 30/31 March a force of 795 Lancasters, Halifaxes and Mosquitoes were dispatched, 608 dropping 2,148 long tons on the city. 94 aircraft are missing. Same night, Mosquitoes bombed Kassel, Cologne, Oberhausen, Julianadorf and airfields in Holland. Other operations for the week included an attack on Duisburg (18 tons) and Krefeld-Uerdingen on 27/28 March by Mosquitoes. On 29/30 March, Halifaxes and Mosquitoes bombed marshalling yards at Vaires, France (306 tons); Lancs bombed aero-engine works at Lyons, France (136.0 tons); Mosquitoes attacked Kiel, Krefeld-Uerdingen, Aachen and Cologne. Mosquitoes were out again on night of

31 March/1 April, attacking Essen without loss; following night they attacked Hanover, Aachen and Krefeld, again without loss.

Weather restricted Allied Expeditionary Air Force operations most of the week; on 27 March 53 Ninth Air Force B-26s were dispatched on a military objective in the Pas de Calais area; 18 attacked dropping 28 tons. 22 RAF Mitchells and 18 Bostons, together with Ninth Air Force Thunderbombers, attacked in the Abbeville/Amiens area on 28 March and Mosquitoes bombed targets in Dieppe/Rouen area. On the 30th, Typhoons and Spitfires patrolled uneventfully over Cherbourg Peninsula, Brussels and the Paris area.

RAF Coastal Command Torpedo Beaufighters attacked an enemy convoy off the Frisian Islands on 29 March, damaging at least 5 vessels; one Beaufighter was lost. Next day, Beaufighters attacked a large vessel and escort off the Norwegian coast, claiming hits on both. On 31 March, a Lib over the Bay of Biscay attacked the only submarine sighted during the week; two Libs are missing from anti-sub patrols in this area.

On 2 April, Beaufighters attacked a convoy off the Frisians, claiming a torpedo hit on one MV.

Mediterranean : The week brought an increased scale of activity for the Mediterranean Allied Air Forces, with over 1,000 sorties, including those of the Fifteenth Air Force, flown each day up to and including 30 March (reports are incomplete for the remainder of the week). March 29 was the peak of the period; 1,734 offensive missions and 242 defensive sorties were flown. The preceding day, 1,314 offensive missions and 407 defensive missions were carried out.

Railways were again the principal target for the Tactical Air Forces of MAAF. A railway bridge at Fano was the primary for both the Tactical and Strategic Air Forces; the Twelfth Air Force attack on 27 March being followed by two attacks by the Fifteenth, one on 28 March, the other on night of 29/30 March. Both the latter were low-level assaults. This was the only common target for both Air Forces, the heavies otherwise operating in north and eastern Italy at Verona, Mestre, Bolzano, Rimini, Milan and Turin, while the mediums were assigned targets in the central and western portion of Italy in attacks against key railway bridges. In addition, an airfield at Viterbo, harbors at Leghorn, San Stefano, Civitavecchia and Porto Ferrario (Elba) were attacked. Fighter-bombers also cooperated in the attacks on important railway targets in Central Italy.

Motor transport, a radar station, oil tanks and shipping in Yugoslavia, Albania and in the islands off the Dalmatian coast were attacked by fighters.

Middle East Command flew shipping escort and anti-shipping missions, with Beaufighters attacking shipping at Nios Island.

RECENT ENEMY TACTICS

24 March : Unlike previous attacks on Schweinfurt, the Eighth Air Force bombers attacking that ball-bearing center, Frankfurt, and two GAF night fighter bases in France encountered almost no opposition from fighters. However, 9 to 10/10 cloud covered most of the continent, undoubtedly contributing to the lack of heavy opposition. The only attack reported by any of the bombers was by 4 Me-109s which jumped a straggling B-17. None of the B-24s were attacked, but reported sighting 3 FW-189s north of Beauvais, two unidentified twin-engine enemy aircraft near Metz, and two FW-190s, the latter flying parallel to the bombers but not attacking.

The escorting fighters saw only about 11 enemy aircraft, one of which was a Ju-188 caught off the ground near Paris and destroyed. About 10 Me-109s at 10,000 feet were sighted by the P-38s, but dived for the deck when the Lightnings tried to engage.

Moderate, accurate to inaccurate flak was encountered at both Frankfurt and Schweinfurt. Rockets were included in the ground defenses met over Frankfurt. Meager and inaccurate flak was experienced along the routes, but AA fire was notably absent at the two French targets, St. Dizier and Nancy Airdromes. Two of the three missing B-17s were lost to a mid-air collision over Germany, and two P-38s of the five missing fighters to a collision over France.

In Italy, enemy fighter opposition was encountered by one formation of Fifteenth Air Force B-24s over Rimini; it was sharp and aggressive and pilots appeared to be experienced. 25 to 30 FW-190s, Me-109s, Me-110s and Ju-88s attacked in groups of four and five, from four and seven o'clock low, with the Ju-88s attacking from the rear and firing rockets. One Me-110 appeared to be directing the tactics. Flak was slight to moderate heavy at Rimini; slight accurate heavy at Sibenik and Split.

26 March : No German fighters were encountered in the air either by the Eighth Air Force bombers or fighters operating over the Pas de Calais, or the P-47s on low-level sweeps from Beauvais/Tille to Chateaudun Airfields. Flak was moderate to intense, and generally accurate. Ground rockets were observed at Calais and in the target area, and a smoke screen was in operation along the coast in the eastern part of Calais.

27 March : Approximately 40 enemy aircraft were sighted by the Eighth Air Force bombers attacking GAF stations in Western and South-western France during a day of operations which

took the bombers and their escort to within 15 miles of the Spanish border. The largest group of enemy aircraft—about 15 to 20, including FW-190s, Me-109s, and three to four Ju-88s—was seen in the Cazaux and Bordeaux area, but made no attempt to attack the bombers. However, 3 Me-109s near Cazaux tried a pass at 12 o'clock on the high group, but were driven off by the fighter escort. Northwest of Nantes 6 Me-109s and two FW-190s made a number of tail attacks for about ten minutes on both low and high groups. The lead group of one combat wing of B-17s coming back over the Brest Peninsula encountered 10 enemy aircraft, but the several attacks were not pressed home.

The escorting fighters saw about 36 enemy aircraft in the air, the largest force being some 15-plus FW-190s and Me-109s coming up through the clouds at 5,000 feet northeast of Chartres. When they got to 10,000 feet, a P-47 group dove to attack, claiming 2 destroyed and 2 damaged without loss. However, one Thunderbolt, separated from the main formation, was last seen being chased by three enemy fighters. Directly before these German fighters broke through the undercast, the P-47s observed a burst of white flak immediately followed by three red bursts.

Numerous aircraft were seen on the ground, and one P-51 group, observing about 75 aircraft on Cazaux Airdrome, undamaged by the bombing, went down strafing and claim 21 destroyed, including the following types: Me-109, Ju-52, Ju-88, FW-190, Me-410, Fi-156, Do-217, He-177, and Me-110. The group's total claims, including 6 in the air, were 26 destroyed, 1 probably destroyed and 8 damaged for the loss of one P-51 hit by flak from towers and barges along the shore of Lake Biscarosse.

Another P-51 survived an attack by 4 modified FW-190s and 3 Me-109s as he chased an enemy fighter to 12,000 feet near Angers. The seven fighters were unable to catch him in his dive to the deck.

Another P-51 group sighted two all-silver FW-190s near Le Mans. Two P-51s dove after them and were apparently led across three flak towers near Vendome and were forced to break off the chase.

Flak was described as moderate to intense and accurate at Chartres, and moderate accurate at La Rochelle and Mont-de-Marson. Little opposition from flak was encountered at St. Jean D'Angely and Cazaux. At Bordeaux it was meager to moderate and fairly accurate. Inaccurate fire was

experienced at Le Havre and from flak boats and other surface vessels within a radius of 30 to 40 miles from the mouth of the Gironde River.

28 March : In the second Eighth Air Force attack on GAF airdromes in France not one enemy aircraft was seen in the air by the bombers, and only one unidentified multi-engine type was seen by the fighter escort. As in the previous mission, a number of German aircraft were caught on the ground and 30 were destroyed, one probably destroyed, and 33 damaged.

Again a P-51 group went down to strafe German aircraft undamaged by the bombers. Four minutes after the last bomb exploded on Dijon/Longvic Airdrome the group came in downwind to use the smoke and dust of the bomb explosions as a screen. About 75 enemy aircraft were on the field. The P-51s made several passes over a period of more than ten minutes and destroyed 24, probably destroyed one more, and damaged 31 enemy aircraft, in addition to shooting up personnel, gun emplacements, the control tower, and other installations. Light inaccurate barrage-type machine-gun fire was seen during the entire attack, but not until the fourth or fifth pass at the field, ten minutes after the attack began, was explosive light flak observed. One P-51 was damaged when it hit a cable (similar to British anti-invasion cables) strung across one end of the field. Included in the claims were the following types: Ju-88, Me-110, He-111, Me-410, Me-210, Do-217, Fi-156 and a Gotha 242 glider.

Flak was moderate and accurate at Reims, and at Chateaudun the fire was meager to moderate and very accurate, resulting in the loss of two B-17s, the only bomber casualties of the day.

A number of rocket attacks were made by Me-109s and FW-190s on Fifteenth Air Force B-17s attacking Verona. One aggressive attack was

made on B-24s by six to eight Me-109s and FW-190s, but the enemy fighters did not appear anxious for combat. One group of bombers reported the use of rockets which appeared to burst into 20 small pieces, covering a pattern of 50 feet. An unsuccessful attempt at aerial bombing was made by the enemy aircraft.

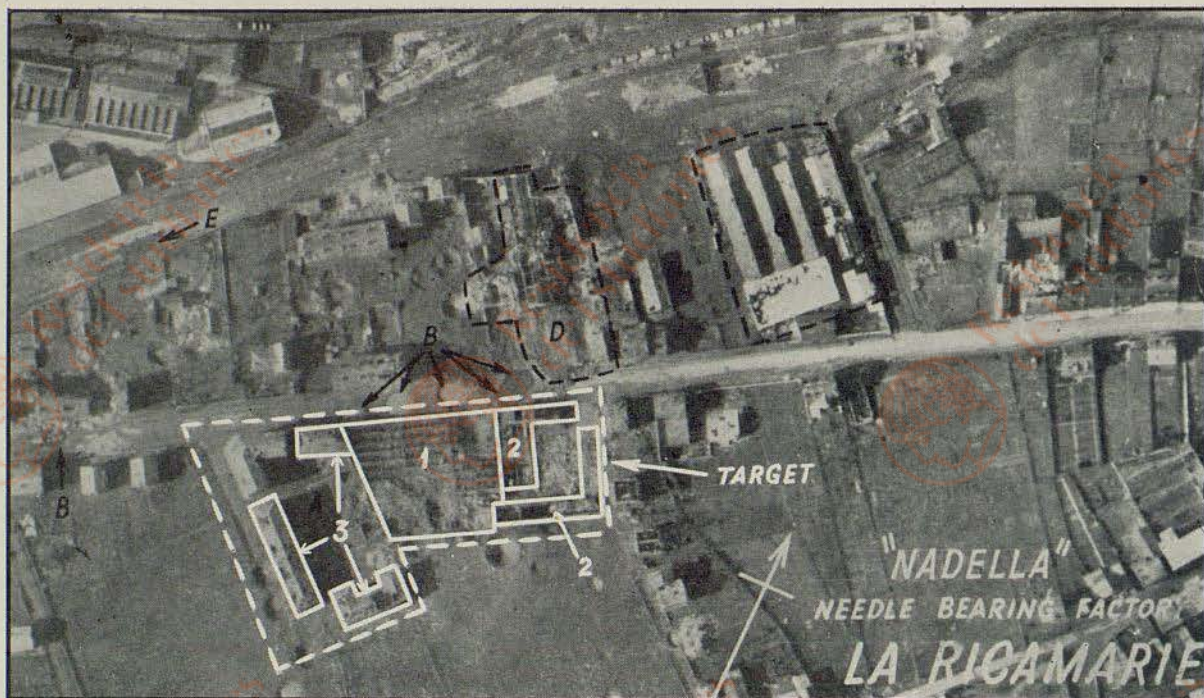
Twenty-five to 30 enemy fighters were encountered by P-38s and B-24s which attacked Mestre. These planes made aggressive attacks in pairs in line.

Fifteenth Air Force : More detailed reports have now been received on reactions to the attacks on 11 March against Toulon and Padua.

B-24s over Toulon harbor and naval base were attacked over the target in spotty, uncoordinated fashion by about 30 FW-190s, Me-109s, and Me-410s. They approached from all angles, firing from distances of 600 to 800 yards, without closing or displaying any aggressiveness. An apparent signal was reported, consisting of three white flak bursts high above the bombers, whereupon enemy fighters immediately attacked. Escort P-38s encountered two separate groups of fighters, one timid, and the other tough and persistent. Heavy flak was accurate, moderate to intense over Toulon area.

Opposition to B-17s over Padua on the same day was considerable. Me-109s and 110s, FW-190s, Ju-88s, and Ma-202s bounced singly, in pairs, and six-abreast, firing cannon and closing to 150 yards. Some of the FW-190s were reported firing rockets. Most passes were from 3 to 9 o'clock, high, low, and level. Enemy aircraft dived under our formations and generally repeated the attacks. Tail attacks were made only on last elements. Escorting P-47s met some 80 single-engined fighters, many of which did not attack. Flak at target was inaccurate and slight.





LANCASTER TARGET: The Nadella needle-bearings factory at La Ricamerie (A) was effectively bombed by RAF heavies night of 11/12 March. A large multi-bay building (I) was half destroyed and half gutted by fire; several sheds at the east end of the plant were almost

completely devastated (2); three unidentified buildings suffered roof damage (3). There were hits on the highway (B); an unidentified factory (C) had moderate roof damage and another unidentified factory (D) was almost totally wrecked. There was a hit on railway tracks at (E).

RAF Precision Attacks by Night

FOLLOWING the extremely damaging attack on the Gnome & Rhône aircraft engine works at Limoges, France, on 8/9 February, RAF Bomber Command has continued to carry out a series of similar attacks with a high degree of success. Using for the most part large bombs, many of them of the new 12,000-pound type, specially-trained Lancaster units have attacked a number of industrial targets in France of vital importance to the German war machine, achieving a high degree of precision and great concentrations of damage.

Typical of these operations was an attack on 11/12 March against a factory making needle-bearings for instruments and other small machines at La Ricamerie, results of which are shown in the reconnaissance photograph on this page.

On the same night as the La Ricamerie attack, 23 Lancasters bombed the aircraft factory and airfield at Ossun with good effect, 33 Lancasters went to Clermont-Ferrand, successfully attacking another aircraft plant and field there, and 30 attacked similar targets at Châteauroux/Deols. Results of these operations were described in SUMMARY No. 20 (pages 10-12).

Recent attacks on explosives factories at Bergerac and Angoulême have been of the same nature, as was that on the Michelin rubber plant at Clermont-Ferrand.

Relatively small formations of Lancasters, manned by experienced and carefully-trained crews, are responsible for the success of these missions, an outstanding feature of which has been the economy of force used to produce the desired result. Expert navigation, followed by pinpoint marking of the target by a single aircraft at low level, has permitted visual bombing with a precision comparable to the best results obtained in daylight.

A SLIGHTLY different type of night operation has also produced highly satisfactory results for the RAF in recent weeks. Medium-strength Halifax formations have bombed marshalling yards at Amiens, Le Mans, and Trappes with excellent effect. The rail complex at Trappes was virtually saturated with HE and IB concentrations, and damage there was very severe. Two attacks on Amiens and one on Le Mans were likewise very destructive to German transportation in France.

The marshalling yard attacks do not necessitate extreme accuracy of the order reached in the Lancasters' pinpoint attacks. But through the use of special equipment, and of flares dropped by pathfinders from very low level (a method made possible by the lack of heavy concentrations of flak at these targets), the railway yards have been attacked visually with excellent results.

RESULTS OF ALLIED ATTACKS

St. Dizier / Robinson Airfield: This German base in France was attacked by 142 Eighth Air Force Liberators on 24 March, which achieved two heavy concentrations of HE bursts (see oblique photograph below) and caused considerable damage. In the southeast dispersal area, three hangars have been destroyed and another damaged, as seen in photo reconnaissance cover; the concentration runs along the perimeter track to the village, where further damage occurred. In the administrative block, four barracks were destroyed, three other buildings were demolished, and five damaged. Fragmentation bombs fell across the south dispersal area and landing ground, and at least four aircraft are believed damaged by hits or frag blasts.

Soesterberg Airfield: Reconnaissance over this German base in Holland shows damage resulting from two attacks. On 8 March, 47 Ninth Air Force B-26s, and on 17 March 15 Eighth Air Force Thunderbombers attacked. Damage is mainly in the area of hangars, repair shops, and stores. All three hangars are severely damaged, five medium buildings are destroyed or severely

damaged, and minor buildings are seen to be destroyed or burned. There are craters across landing grounds and runways, aircraft shelters have near misses, and a fuel tank was squarely hit.

Creil: An especially successful attack was carried out on marshalling yards at this town in northern France on 23 March by 193 Ninth Air Force B-26s. The target had been attacked by formations of the same command on 17 and 20 March, and considerable damage from those operations is visible in strike photos of the latest attack. All elements of the rail facilities here received many direct hits. The locomotive shed and transshipment buildings are destroyed, tracks are cut and roadbeds heavily cratered at many points, and wrecked rolling stock is seen in several parts of the area. The Oise River locks also received direct hits, and are in the midst of a heavy concentration of bursts. The Beauvais/Tille Airfield, about thirty miles from Creil, is seen to have received about 24 bomb strikes on its landing ground during a simultaneous B-26 attack.

Hirson: Marshalling yards at this French railroad center were attacked on 25 March by



BOMBS ON ST. DIZIER : This oblique photograph shows St. Dizier/Robinson Airfield toward the end of the Eighth Air Force attack of 24 March. Smoke is rising

from a concentration of GP bursts in the southeast dispersal area, while across the field another blanket of smoke rises from burning administrative buildings.



NINTH AIR FORCE AT WORK : This concentration of bursts on the marshalling yards at Haine St. Pierre occurred at the beginning of an attack by IX Bomber Command B-26s on 23 March. Four explosions are visible, with at least three direct hits on engine sheds.

148 Ninth Air Force B-26s, strike photographs showing a majority of bombs falling in the main target area. A very heavy concentration blanketed the locomotive sheds and repair shops, and another covered the transshipment platforms. Storage sidings were hit, and a number of cars were destroyed and damaged, and tracks were cut in several places. Explosions and fires were in evidence before the end of the attack, and late strike photos reveal definite damage to the freight depot, transshipment facilities, etc.

Chartres Airfield: Photographic coverage following attack on 27 March by 67 B-17s of Eighth Air Force shows that 198 tons HE unloaded by bombers destroyed a large double hangar and a large workshop; a large double hangar and another small workshop were seen to be about 50 percent destroyed; several stores and unidentified buildings were severely damaged or destroyed. At least 180 fresh craters are noted on the west side of the airfield, and at least eight direct hits and many near misses are observed on the railway track. A direct hit was scored on the main road to Ablis and the perimeter track on the south dispersal area; a smaller concentration of fresh craters is also evident in the south dispersal area.

Frankfurt : Reconnaissance photograph on the page opposite shows severe damage to an Eighth Air Force target of importance. It is the Alfred Teves aircraft crankshaft factory, Priority 1+, attacked by 41 B-17s on 20 March. The main Teves plant has 19 of its 24 buildings destroyed or severely damaged, and the branch works adjacent to it has 13 of 20 buildings demolished, gutted, and otherwise heavily damaged. A portion of the Adlerwerke A. G. military vehicles factory is also covered, and is seen to have been considerably damaged. Not showing in this photo is the Griesheim Electrochemical works, which received moderate damage in the same attack. Annotations point out specific damage to the Teves plant, as follows :

A. ALFRED TEVES G.m.b.H. — Branch Works — (Aircraft components).

1. Unidentified building : roof damage.
2. Machine shop : gutted and partly destroyed.
3. Storage accommodation, gutted and partly destroyed.
4. Machine shop : gutted and partly destroyed.
5. Large machine shop : gutted.
6. Unidentified buildings : gutted and partly destroyed.

B. ALFRED TEVES G.m.b.H.—Main Works—(Motor transport components).

7. Light machine shops : destroyed by fire.
8. Machine shop : gutted.
9. Machine shop : minor damage.
10. New machine shop : gutted.
11. Machine shop : gutted.
12. Unidentified buildings : destroyed.
13. Large storage hall : gutted.
14. Storage and assembly : partly gutted, partly severely damaged.
15. Storage and dispatch : severely damaged.
16. Machine shop : partly gutted.

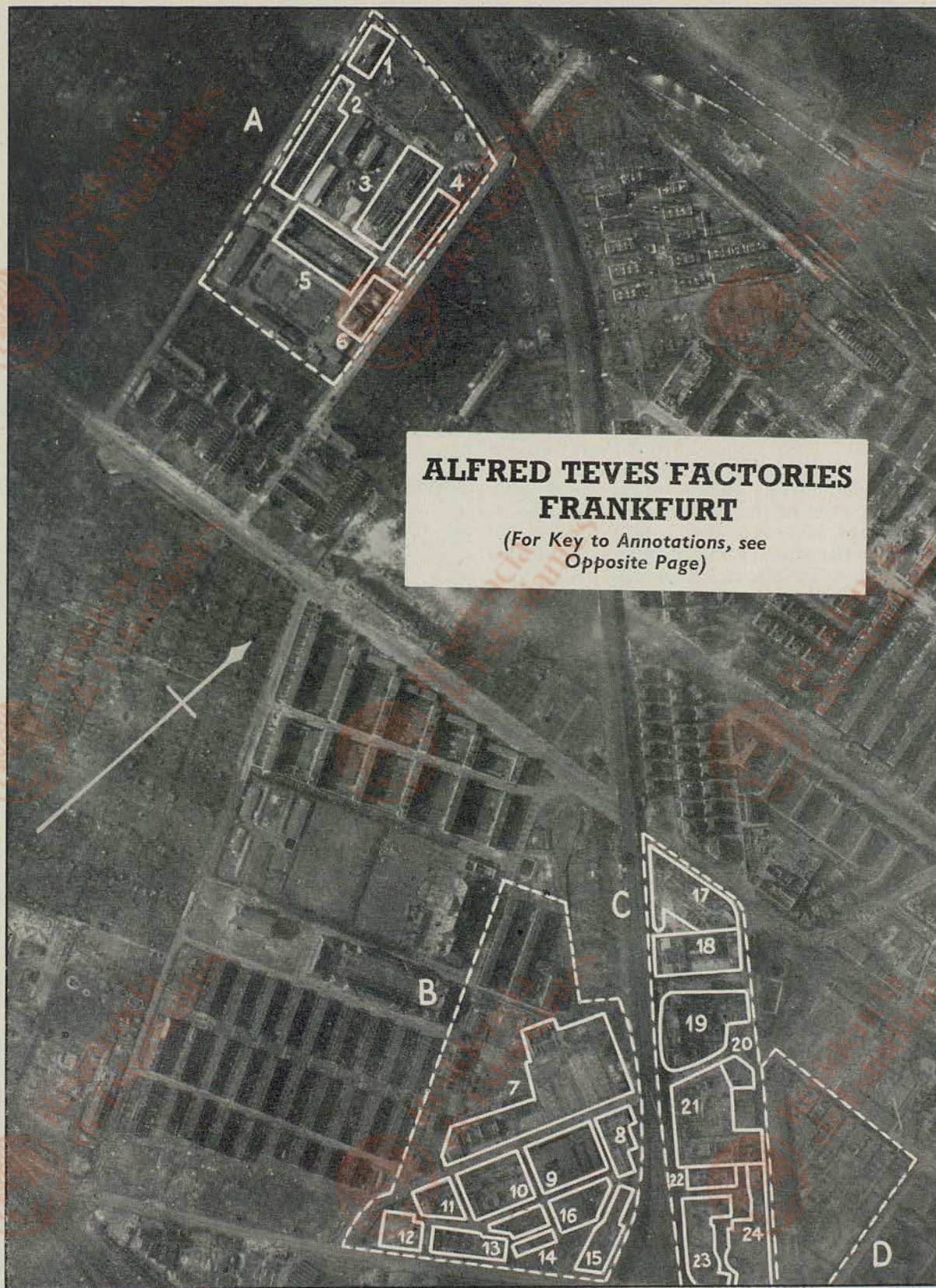
C. ALFRED TEVES G.m.b.H.—Additional Branch Works—(function unknown).

17. Large building with several small buildings adjacent : almost totally destroyed.
18. Complex of buildings : partly gutted. Central portion damaged by fire on northern side.
19. Complex of workshop buildings : all except northern and western portions completely gutted.
20. Medium-sized building : destroyed.
21. Group of buildings : completely gutted.
22. Medium-sized building : gutted.
23. Large building : almost totally destroyed.
24. Five small and medium buildings : four completely, one half destroyed by fire and HE.

D. ADLERWERKE A.G.—(Army motor vehicles).

In the portion shown the Diesel Oil fuelling station is gutted, the repair shop for tanks is severely damaged, as is the large garage. A later reconnaissance picture shows severe damage to the rest of this plant, including three machine shops, stores buildings, and a sheet-metal shop.

Reconnaissance over the main part of Frankfurt, following the above attack and two heavy attacks by RAF on 18/19 and 22/23 March, shows severe additional damage in the city. Rebstock Airfield, west of Frankfurt, and the adjoining marshalling yard, have been very heavily hit; at the airfield, nearly every building has been destroyed or damaged. The railway station and warehouses in the west harbor, and the Great Market in the same district, have been very heavily affected, while one of the highway bridges over the Main River has had a direct hit. In addition, considerable damage has been caused to the business section of the city, with many fires still burning about 12 hours after the last RAF attack. Hartmann and Brunn premises, manufacturing fuses for mines; are also substantially damaged.



**ALFRED TEVES FACTORIES
FRANKFURT**

(For Key to Annotations, see
Opposite Page)

Pau/Pont Long Airfield : When 72 Eighth Air Force B-24s dropped 183 tons on 27 March, the weight of the attack fell across the south landing ground, affecting hangars, barracks and landing areas. One large hangar was completely destroyed, one almost totally destroyed, and two others sustained severe roof damage. In the center of the field, two large and three double hangars were destroyed, single hangars and a rectangular building were gutted by fire; 13 barracks buildings were destroyed, and four half-destroyed. In the east end, many hangars were destroyed, severely damaged or gutted; several barracks buildings were destroyed or damaged.

At least 85 craters are observed on the south landing ground area, and five direct hits can be seen on the main road west of the field.

Cazaux Airfield : Photographic reconnaissance after Eighth Air Force attack of 27 March shows that 271 tons dropped by 117 Forts damaged buildings and landing ground heavily. Many hangars and aircraft shelters on the north, west, and east sides of the field have been destroyed or damaged, while at least 15 buildings in a hutted camp to the west of the airfield have suffered similarly. Six aircraft (probably more) have been destroyed or damaged on the landing ground and dispersal areas, and there are heavy concentrations of craters on the landing ground.

Tours/Parcay Airfield : Attacked by 74 B-17s of Eighth Air Force on 27 March. Provisional statement on damage reveals that weight of the attack fell in and around the main station buildings and barracks, including hangars, workshops and stores. At least 27 direct hits were scored on the runways, and many large concentrations of craters were observed in the landing area. Damage to hangars included direct hits on two double hangars and fresh damage to one previously damaged. Several barracks huts and a small unidentified building were severely damaged and gutted.

Biarritz Airfield : 49 B-24s of Eighth Air Force dropped 130 tons on target on 27 March; photographs taken later in the day show that ten buildings in the living quarters area and two buildings in the ammunition storage area at the east end of the airfield have been destroyed. The hangar and two workshops at the northeast corner have been damaged, and there were several concentrations of craters in the woods adjoining the field.

La Rochelle/La Leu Airfield : 59 B-17s of the Eighth Air Force attacked here on 27 March; good quality photographs taken shortly after show that the whole weight of this attack fell evenly across the buildings on the west boundary of the airfield. Roof damage was inflicted on hangars; workshops and stores buildings were destroyed, and

several unidentified buildings were destroyed or damaged severely. Also damaged were a hutted camp and a stores dump, which received seven direct hits.

Tours/St. Pierre des Corps : Coverage of 27 March Eighth Air Force attack by 35 B-17s shows damage concentrated in the south half of the aircraft repair works, the Usine Liotard. A medium multi-bay workshop has been partly destroyed by at least two direct hits, and roof damage was done to the remainder. Also destroyed by direct hits were a small rectangular building and another long rectangular building north of the multi-bay workshop. Blast damage and a glancing hit destroyed a small building in the central area of the works, and additional roof damage has been noted here. At least 25 craters are visible within the target area, and other concentrations are evident along the river bank to the east and west of the factories.

Bordeaux/Merignac : The S.N.C.A. Aircraft Assembly Plant and Airfield provided targets for Eighth Air Force attack on 27 March by 124 fighter-escorted B-17s. Photographs show that the Forts scored direct hits on the main building of the works and destroyed, gutted or damaged severely other workshops and office buildings. Many large hangars were holed and damaged, and the bulk fuel dump received a direct hit. A few small buildings were still burning near the ammunition dump at time of photography.

Approximately 45 craters are visible on the north end of the landing ground; another large concentration is observed at the southeast corner, where there are at least 16 hits on the WNW/ESE runway. Further concentrations are noted in the south and east boundaries of the field.

Stuttgart : Further examination of photographs covering the V.K.F. Works (SUMMARY No. 20, page 10) reveals additional points of damage to previously-damaged buildings, hit during recent series of RAF and USSTAF attacks on this industrial center. A three-story building, the roof of which was previously damaged, is now seen to be nearly destroyed by several direct hits. Another building, previously one-half destroyed, is now seen to be three-fourths destroyed, and one bay of a four-bay building is one-third destroyed by blast.

Toulon : Further important damage resulted from attack on naval and harbor installations here by 122 Fifteenth Air Force Liberators on 11 March. The quay to the west of the submarine base has two new craters, and five buildings nearby are damaged. A merchant vessel has been sunk alongside a main quay, and sheds and other facilities in the Missiessy Basin are freshly damaged. A large multi-bay building on the provisioning

quay received two direct hits with consequent damage, and there were further direct hits on the large double drydock, and on the Arsenal quay in the New Basin.

Padua: The marshalling yards at this important north Italy rail center were attacked by 111 Fifteenth Air Force Forts on 11 March. Through tracks are seen in reconnaissance photos to have been cut in several places, numerous sidings and subsidiary tracks were damaged by craters, and a number of destroyed and derailed cars further obstructed the area. Storage sheds, a sizeable gasholder, and miscellaneous railroad buildings were destroyed by direct hits and blast, numerous small structures were wrecked, and there was considerable damage in the town.

Knin: This rail-junction town on the Yugoslav coast was attacked successfully by 37 Fifteenth Air Force B-24s on 19 March. Reconnaissance pictures show that all through tracks were blocked by craters at the southern end of the yards, severe damage was caused to the main station, to rolling stock and siding trackage, and the locomotive turntable was damaged and is probably unserviceable. In addition, a storage warehouse near the yards was wrecked, several highways were cut by craters, and a number of unidentified buildings in the town were severely damaged.

Florence: On 11 March, 49 Marauders of the Mediterranean Allied Tactical Air Force attacked the main marshalling yard here, causing severe damage to tracks and rolling stock. Reconnaissance photos show also that the main roundhouse was one-third destroyed, and locomotive repair shops were heavily damaged. In the Old Fort, close to the yards, several buildings were partially destroyed, and there is some residential damage in nearby areas of the city itself.

Courtrai: A provisional statement on RAF attack of 26/27 March reveals that damage to marshalling yards at the target was heaviest in the reception, forwarding and marshalling sidings. At reception sidings, direct hits severely damaged the engine sheds and turntable; tracks were cut in at least 20 places and several cars were damaged. A large portion of a long narrow shed was severely damaged at the marshalling sidings, tracks were cut in at least 30 places and several cars were

damaged. More cars were damaged and tracks were cut in about ten places at the forwarding sidings. Additional damage was observed at the freight depot and main station, where tracks were cut in many places.

An unidentified factory south of the marshalling sidings sustained severe damage; four large multi-bay shops of an unidentified industry alongside the reception sidings received several direct hits. Several points of business or residential damage are seen in the vicinity, and a heavy concentration of craters is noted in open ground just east of the reception sidings.

Essen: Poor quality photographs taken after 608 RAF heavies attacked on night of 26/27 March are blurred and lack stereoscopic overlap, but fresh damage can be seen to several workshops of Friedrich Krupp A.G. Two machine shops, open hearth furnace shops and probably part of the Widia steel plant sustained severe damage. The roof of the main passenger station was partly destroyed, and one or two of many fires started during the attack were still burning at time of photography.

Laon Marshalling Yards: As a result of the RAF attack on 23/24 March, there are two concentrations of craters in the marshalling yards; one in the center across the converging lines at the exit from the sorting sidings, the other in the northwest part of the yards on the tracks serving the locomotive repair shop, which has itself been damaged. Many sheds and small buildings have been destroyed or damaged.

Aulnoye: Marshalling yards here were the targets for RAF on 25/26 March and Ninth Air Force Marauders on 15 March; provisional statement on damage done by these two attacks shows that more than 20 direct hits made on or near tracks caused damage or derailment of rolling stock. At least three direct hits have cut the track on the Maubeuge side at the northeast end of the yards. The central portion of one of the carriage and car repair shops has been destroyed, and three adjoining buildings were damaged. In the area to the south of the yards, the locomotive shed was almost half destroyed by direct hits, and there are a few further incidents of damage to tracks in this area.

Do-217 With FX Fittings Over England

SHOT down during the course of the GAF attack on England night of 19/20 March was a Do-217M-1 fitted with equipment generally used with FX-type radio-controlled bombs. Though the plane was almost totally destroyed when it crashed, the remains of a Lotfe 7D bombsight mounted on a tilting bracket were found. There were strong points 11 feet, 5 inches from each wingtip, and in these were found a bomb fusing plug and what is believed to be a hot-air pipe. The Lotfe sight was not used during the last sortie of this aircraft; a different type of sight, the BZA, was employed.

ATTACKS ON ISTRES/LE TUBE

Results of two attacks on Istres/Le Tube Airfield, in Southern France, by B-17s of what is now Fifteenth Air Force, are shown in the ground photographs on these pages. This important GAF base has been attacked a number of times since the occasions which produced this damage.

16 NOVEMBER: 85 Fortresses attacked the base with 178.5 tons of bombs on this date. Hangars and other buildings were hit and a number of aircraft destroyed on the ground. The photos at right show damaged hangars and the remains of one airplane. At left and below are damaged offices and living quarters on the field.



17 AUGUST: 136.7 tons were placed on the airfield on this date by part of a formation of

B-17s which also attacked the neighboring Salon Airfield. The center photograph below shows the field completely smoke-covered as the

result of the bombing. Among the aircraft destroyed on the field were the two gliders shown—a DFS 230 at left, and an Me-321 at right.



MORE DATA ON THE He-177

Inspection of the German Bomber Proves it to be "Very Ordinary"

FURTHER facts on the He-177 bomber have been collected and analyzed by AI 2(g), Air Ministry, partly from interrogation of prisoners from KG 40 and KG 100, and partly from inspection of crashed specimens of the plane.

The comprehensive article in SUMMARY No. 16 dealt largely with data acquired from crews of KG 40. Corroboration, and in several cases, correction, of their statements, have been obtained from examination of wreckage of one aircraft in particular, brought down on 21/22 January, and from other specimens obtained recently, which have yielded a considerable amount of concrete information. The present report deals with several facts not treated in the previous article, and with revisions of data contained therein, especially those regarding loading of fuel and bombs and the power-installation generally.

Heralded as a super-aircraft as long as four years ago, the He-177 has gone through a long incubation and ironing-out period, during which time many rumors have been circulated regarding its ultimate potentialities. It can now be said, however, that this aircraft is not in any way remarkable for speed, range, or operational altitude—though the bomb load is admittedly formidable. In fact, AI 2(g) sums it up as "a heavy bomber of very ordinary performance, albeit of rather unorthodox design."

Some of the design aspects are of considerable interest, as they affect current operational performance.

Fuel Tankage : Latest information on the He-177's tanks conflicts in several respects with previously published data. It now appears that the greater part of the fuel is carried in the fuselage and not in the wing, as was thought hitherto. It now seems that the feed-tank for both engine-assemblies is the one designated as "5" in the diagram on page 6, SUMMARY No. 16, rather than the one designated "1." It also appears certain that the total fuel load is far smaller than that estimated and tabulated from prisoners' statements in the same article. For medium-range operations, the total gallons carried is in the neighborhood of 2,360 (Imperial), instead of the previously mentioned 3,180-3,445. The maximum fuel-load (without drop-tanks) is approximately 2,784 gallons, with this load giving an operational range (in still air and at economical cruising speed) of just under 3,000 miles. Any bomb load worth carrying would cut the range well below this figure, and operational conditions would surely

reduce it a good deal further. It must be recognized that these estimates are approximate, but they are much closer to the true figures than the former ones. On special long-range reconnaissance flights, of course, the normal tankage could easily be augmented by bomb-bay tanks and exterior tanks.

Bomb Load : The bomb load of the He-177, like that of most German heavy bombers, appears to be limited by weight capacity rather than by space. There is general agreement among informants that the normal all-up weight of the He-177 is 68,000 pounds, and the empty weight is now reported to be 44,000 pounds. Making allowance for weight of crew, oil, and ammunition, the weight of fuel and bombs which can be carried is about 20,350 pounds, normal loading.

If the aircraft is assumed to carry 600 gallons of fuel for short operational flights, then the maximum bomb load will be about 16,000 pounds. It may be noted that a prisoner stated that on 21 January an He-177 taking off to attack London from Châteaudun carried 11,000 pounds of bombs, and 9,360 pounds of fuel—which agrees with the normal-loading figure above (20,350 pounds). Previous reports that the bomb-load of this aircraft could as a maximum reach 16,750 pounds, would imply that the fuel would then be limited to about 475 gallons in order not to exceed normal all-up weight. The corresponding still-air range would be very small—about 400 miles. All-up weight in maximum overload has been stated to be 72,500 pounds, but is extremely doubtful that this condition would ever be attempted operationally.

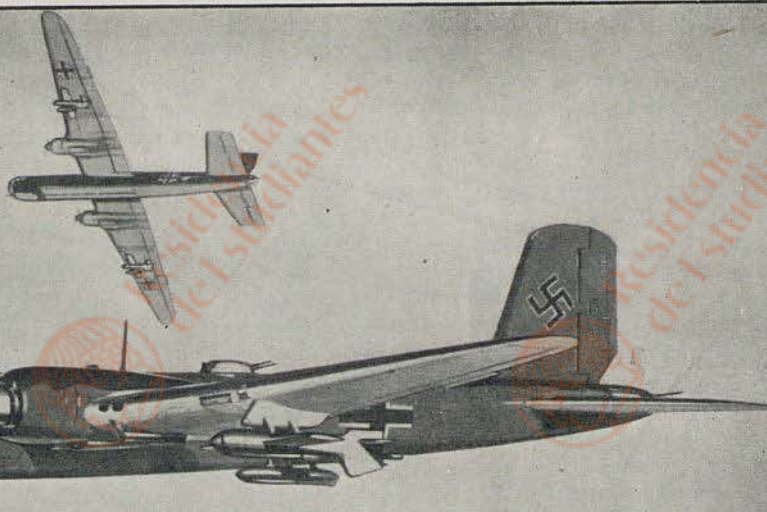
In normal practice it is doubtful if the bomb load would exceed two 1,800-kg. and two 1,000-kg. bombs carried in the bays. As an alternative, it is known that the plane can and does carry two 2,500 pound bombs externally. Other external loads may comprise two 1,400 FX radio-controlled bombs, or two Hs-293 glider bombs (*see cut*).

Power Plant : The engine installation of the He-177 has been discussed profusely in the past, and its merits and demerits are still in dispute. As is well known, the units comprise pairs of coupled engines, and the aircraft has been described most often as being a four-engine type. However, since the makers employ a separate designation for these composite units, they might more properly be regarded as large single engines, and the He-177 as a twin-engine type.

In the A-3 series of He-177, DB 610 engines are fitted. These are duplex DB 605s. The two engine

He 177 A-3

WITH 2 x Hs 293



units are mounted side by side and are inclined so that the inner banks of cylinders are disposed almost vertically. In place of the normal reduction-gear housing there is a single large gear casing which connects the two crankcases. The two crankshaft pinions drive a single propeller shaft gear. This is done directly on the starboard unit and indirectly, through idler gears, on the port unit; the port and starboard propellers are thus contra-rotating.

According to an engine card which has been recovered, the maximum power of the DB 610, corresponding to the maximum boost permitted, would be 2,580 h.p. at take-off. This is somewhat less than the figure of 2,900 h.p. arrived at by simply doubling the take-off power of the fully rated DB 605. The DB 606, however, which the DB 610 replaced in the 177, is reported on good authority to have developed 2,660 h.p. at take-off, and this is quite feasible on the basis of known performance of later engines of the 601 series. There is, therefore, the apparent anomaly that the DB 606 was replaced by the potentially more powerful 610, whereupon the latter was then de-rated so that its maximum power is less than that of the 606.

If and when the He-177 makes an operational

appearance powered with DB 613 engines, it is expected that both power and performance will be appreciably improved, even if de-rating is again resorted to.

It has been contended that the object of the duplex engine was to enable one of the units on each side of the He-177 to be cut out for economical cruising. It seems doubtful, however, that this ever could have seriously been intended in operational flying, unless the aircraft had been grossly overpowered with all four engines in operation—which is certainly not the case. It should be remembered that even when an orthodox four-engine bomber flies on two of its engines, these drive propellers designed for their power. On the He-177, however, with only half of each engine in operation, this half must drive a four-bladed propeller of 14 feet, 10 inches diameter which is normally intended to absorb the power of the whole. It would be unreasonable to expect anything like efficiency under such conditions, even granting the flexibility of the variable-pitch, constant-speed propeller.

Armor Protection : The armor installed in the He-177 is described as "comprehensive." One report states that the total weight is 2,500 pounds, but this has not been accurately verified.

The He-177 in Operation in KG 100

Information on the operational use of the He-177 against England has been acquired from captured crew-members of I/KG 100, the unit which has been operating from Châteaudun and an alternate base at Rheine, Germany. The present report is consolidated from interrogation of prisoners who

bailed out of three aircraft, one of which was shot down on 23 February, one on 24 February, and one on 2 March. These survivors are the first from KG 100 to fall into Allied hands since this Gruppe converted to the He-177.

As reported in SUMMARY No. 14 (page 6),

I/KG 40 and I/KG 100 operated together from Châteaudun in the first of the "reprisal" raids on London, 21/22 January. About 1 February, KG 40 was withdrawn from France, but I/KG 100 has continued to operate both from Châteaudun and a supplementary base at Rheine, being augmented by additional Staffeln after the departure of I/KG 40. There has been considerable shuttling back and forth between the French and the German bases, often involving the ferrying of ground personnel by liaison aircraft. Rheine has only limited repair and maintenance facilities, and relatively unskilled workers were sometimes employed for the job of arming KG 100's aircraft, under supervision of a skeleton ground crew.

The Third Staffel of KG 100, the first to become operational with the He-177, was not reinforced until 5 February, when 2/KG 100 arrived fresh from training at Lechfeld, with key technical personnel transferred at the same time from the Lechfeld base. Staffel 1 remained at Lechfeld, still in transition training, until 2 March, and was drawn on for replacement crews for the operating Staffeln, as well as serving as an OTU for new crews converting from the He-111, out of IV/KG 100. The staff of the Gruppe remained at Lechfeld, and up to 2 March the Gruppenkommandeur had been seen at Châteaudun only once, although he flew from Rheine on one of the attacks on London which was started from there.

IT WILL be remembered that Generalmajor Pelz, the Luftwaffe Commander in the West, was emphatic on his insistence on keeping strictly to schedule and course during the attacks against England (SUMMARY No. 14). It turns out that he was not at all satisfied with the degree of concentration achieved in the series of attacks between 21 January and 4 February, for during the middle of February he again visited I/KG 100 at Rheine, at which time he delivered another fight-talk on the subject of maintaining course and ETA. A very interesting feature of his discourse appears in the statement of prisoners that Pelz played down the danger of British night-fighters, and told his audience that on 3/4 February 30 night-fighters had been up over London, only nine of them being controlled from the ground.

Pelz stayed at Rheine on the night of 13/14 February to witness the start and return of 2 and 3/KG 100 on a London operation. He picked a bad evening for this, for a few things went wrong. It was a cold night, and "cold-start" procedure was employed. Thirteen aircraft took off, a fourteenth failing to do so because of a burst tire. This was but the beginning; shortly after take-off, eight of the thirteen airborne returned with burning or overheated engines, which was ascribed to the effects of the "cold start." Of the five aircraft dispatched, one never reached the target, and it was the Gruppenkommandeur's ship. Somehow or

other, he found himself over Norwich, eventually turned back across the water, and carried his bombs all the way back to the Zuider Zee before jettisoning them and returning to base. To make Generalmajor Pelz' evening almost perfect, one of the four aircraft which went to London was shot down by a night-fighter, and only two or three returned to Rheine.

A WEEK later, Generalmajor Pelz went to Châteaudun, where he conducted the briefing himself for the attack of 22/23 February. By this time, I/KG 100 had got into stride, and things went a little more smoothly. The fourteen aircraft apparently were all airborne on a tight schedule, only ten minutes being allowed for them all to take off. Any aircraft delayed more than three minutes beyond its arranged time was not to be dispatched. They took off in a line, each pilot keeping his tail light on until airborne; as the next pilot saw it go out, he was to start his run at once. The planes circled the field at 3,000 feet, setting course for the target at specified times.

WHEN 3/KG 100, the original Staffel, first went to Châteaudun from Lechfeld in December, the strength was ten crews and ten He-177s of sub-type A-3. These had been drawn from the "large pool"—so-called by prisoners—of aircraft at Lechfeld. Simultaneously with this arrival at Châteaudun, the Staffel received an additional 14 aircraft which were ferried from Oranienburg, giving a total strength of 24 ships, of which five were later transferred to I/KG 40 to replace losses. Staffel 2 arrived at Châteaudun with eleven aircraft and the same number of crews. Serviceability of the Gruppe was then usually between twelve and fifteen aircraft, although accidents occurring just prior to several operations reduced operational strength to as few as six ships for some of the London attacks.

Between the 21 January attack and 2 March, the Gruppe lost six crews, four during operations, another to a P-51 while en route from Rheine to Châteaudun one day in February, and another to their own flak near Antwerp. Up to the time of interrogation, no replacements had been received for these aircraft, and only one crew had been replaced.

It may be of interest to note the high percentage of noncommissioned pilots in I/KG 100. In Staffel 3, at least six first-line pilots are *Feldwebel* (sergeant), and one at least is an *Unteroffizier* (Corporal). When Göring took fancy to a certain Gregor, who in the autumn of 1942 was with the unit at Lechfeld as a pilot *Unteroffizier*, his accolade consisted of a promotion to *Stabsfeldwebel* (S/Sgt.) plus a *Deutsches Kreuz* decoration. Gregor, one of the most experienced pilots in the Gruppe, still holds this rank and pilots the Gruppenstab aircraft, "flagship" of the Kommandeur.

NOTES ON GERMAN FLAK

Reports from USSTAF Attacks Provide An Evaluation of the Berlin Defenses

Central Berlin Barrage : More complete reports covering Eighth Air Force attacks of 6 and 8 March are an interesting exposition of the types of heavy anti-aircraft fire to be encountered in the Berlin area.

On 6 March strong formations attacked targets in the southeastern and southwestern districts of the city from heights between 18,000 and 24,000 feet. "Chaff" was employed, and it is possible to make a comparison of the ground opposition encountered over these two areas because of similar weather conditions, enabling the guns to engage mainly by "seen" methods of fire control.

SE Districts : Approaching from the south-east, the first two formations to attack were not engaged by flak until bombs had been dropped. Predicted concentrations were then encountered, which were reported as inaccurate. As the attack developed the intensity of the fire increased until concentrations of approximately 100 to 150 bursts were seen at one time. In the final stages these concentrations gave place to predictor-control "seen" fire, which was described as fairly intense and accurate for a short time only.

SW Districts : The direction of attack was mainly from the south, and, as anticipated, most

formations encountered intense and accurate heavy flak fire, predictor-control "seen." A fixed barrage was seen to be fired over the center of the city. Cloud cover was 3/10 to 5/10.

On 8 March an attack was made on Erkner, in the Berlin suburbs. It was carried out from heights between 20,000 and 27,000 feet, in clear weather with excellent visibility. The direction of the attack was from the east, a turn to the south being made after bombing in order to avoid the main defenses of the city. The leading groups encountered no ground opposition during their bombing runs, after which an intense barrage was seen to be fired over the city. This barrage continued throughout the attack, although aircraft did not cross the city. Groups which followed encountered meager heavy flak fire, predictor-control "seen," over the target area, with the fire being reported as mainly inaccurate. In the final stage of this operation the target was obscured by smoke from fires, and the last formation thus bombed targets in the city instead.

It is interesting to note that fire was withheld until these aircraft were well over the target, when all the guns within range appeared to open fire together. Very intense and accurate fire

AIRFIELD FLAK

This photo shows three flak towers at Gael Airfield in operation. Occasion for the activity was an attack on 21 March by a pair of Mosquitoes of RAF Tactical Air Force, which swept in at zero feet and released eight 500-pound bombs with 11-second delay fuses. One of these is seen exploding within 25 feet of the right-hand tower. A crew of three was manning each of the towers at time of attack, and the gun in the left-hand tower is seen firing. Note the camouflage netting.



predictor-control "seen," was then encountered, and continued until all aircraft were clear of the defended area. It seems likely that, in the initial stages of the attack only, some protection may have been afforded by the employment of "chaff," but it was otherwise rendered ineffective by the clear weather conditions.

"Chaff" vs. AA Accuracy : On 9 March Hanover was attacked by heavy bombers of the Eighth Air Force, in conditions of 10/10 cloud. The attack, which was made in two phases with a short interval between, was carried out by several formations of aircraft from heights between 12,000 and 22,000 feet. The target was approached from an easterly direction. "Chaff" was employed, but in insufficient concentration. Over the target intense and exceptionally accurate heavy flak fire, predictor-controlled, was encountered by all groups. Aircraft in the first phase, however, were not engaged until bombs had been dropped, presumably in the hope that the target might not be identified. The reported accuracy of the fire is significant and shows what may be expected, even under "unseen" conditions, in the absence of effective use of radar countermeasures.

Protection for Searchlight Concentration : During the latter part of February MI 15, British War Office, reported that photographs had revealed the establishment of a searchlight zone in Northern France extending from Fruges in the north to Oisemont in the south, a distance of approximately 45 miles, with an average breadth of 15 miles. 130 heavy searchlights had been located in this zone, the greatest density occurring in a quadrilateral formed by Hesdin, St. Pol, Abbeville, and Doullens. At the time of the original MI 15 report, aircrews had not so far reported any searchlight activity in this zone, which seemed to indicate that this searchlight concentration was for some purpose other than interception of aircraft en route to other targets.

Further developments have now been observed in this concentration. The area has remained unaltered, but by about 20 February photographs began to reveal a policy of siting three, or less frequently two, light guns close to each searchlight. New searchlights were also deployed.

This development has since continued, until by March 18 out of a total of approximately 245 heavy and 27 light searchlights in the area, 111 had light guns sited immediately beside them. The greatest density of such sites is observed in the St. Pol-Hesdin-Yvrench-Doullens district, where, out of a total of approximately 125 searchlights, 71 have light guns deployed with them. Heavy guns have also been increased in this area, which now contains approximately 50 out of a total of 90 estimated for the whole area.

The reaction of these defenses to Allied aircraft has also markedly altered. Until recently no attempt had been made to engage any aircraft, but, on March 5/6, an aircraft was reported to have been continuously engaged by light flak and searchlights while crossing the belt in the Frévent area. On March 15/16 aircraft involved in the RAF operation against Amiens and those returning from Stuttgart encountered considerable opposition from both heavy and light flak as well as from the searchlights.

The enemy's intention therefore appears to be the establishment of a line of flak and searchlight defense in depth behind the coast between Le Touquet and Le Tréport. These defenses may be equally well employed against our aircraft enroute to targets in France or Germany, or against an airborne invasion. It is interesting to note that the flak defenses on the coastline itself show little or no variation.

Phenomena : On 18/19 March the RAF attacked Frankfurt, mainly from heights between 16,000 and 24,000 feet. Near the target a "rocket" projectile, alleged to be ground-fired, was observed at 22,000 feet, flying on a parallel course and approximately 200 feet below the aircraft in question. A reddish glow was seen at the tail of the projectile, which emitted a volume of sparks when making occasional spurts. Following the course of the aircraft closely for 15 to 20 miles it was then seen to cross the track and descend gradually to the ground, where it ultimately exploded with a large, orange-yellow flame. Technical opinion obtained by MI 15, British War Office, supports the position that the object may in fact have been a glider bomb.

How to Recognize a Blitzmaedel

A GAF prisoner captured recently in Italy describes the insignia of rank worn by *Blitzmaedel*, the Luftwaffe's WAC. Silver chevrons a half centimeter wide, worn on the arm, distinguish the ranks, with one chevron indicating a *helferin* (literally, "helper"); two, an *oberhelferin*; and three a *haupthelferin*. Three chevrons and a silver ring around the cuff indicate a *stabshelferin*, and the *kameradschaftsfuehrerin* ("group leader") wears two silver rings around the cuff and silver braid around her collar.

GAF prisoners captured in England have also described the *blitzmaedel*, commenting particularly on their morals. These, like their insignia of rank, appear to tarnish easily.

INDEX

SUMMARIES NO. 11 to NO. 20

Each ten issues of the AIR INTELLIGENCE SUMMARY are indexed in turn. The last Index was published in SUMMARY No. 11 (pages 19-23).

(PW) indicates that the item to which it applies is from a prisoner-of-war source.

BS indicates a reference to the weekly Bombing Summary, which in every case appears on the last page of the issue referred to.

A

Ablauflinie

Bombing run-up line (Ger.) p 16, No 15.

Achmer Airfield

8 AF attack 21 Feb, BS No 16; results, p 14, No 16, p 8, No 18; attack 23 Mar, BS No 20.

Ahlen

8 AF attack 23 Mar, BS No 20.

Aileron Motor (Ger.)

Found in Me-323 (photo) pp 15-16, No 18.

Air/Sea Rescue Service

52 saved from 30 Dec to 11 Jan, p 11, No 11; GAF organization, p 9, No 15.

Albano

15 AF attack 10 Feb, BS No 14; 15 AF attack 14/15 Feb, BS No 15.

Albert

RAF attack 2/3 Mar, results, p 8, No 18.

Alhorn Airfield

15 AF attack 23 Jan, BS No 12; attack 8/9 Feb, BS No 14; attack 16 Feb, BS No 15; attack 24 Mar, BS No 20.

Allied Aircraft, Enemy-Operated

B-17 reported during 8 AF 11 Jan mission, p 7, No 12; B-17 in action over Brunswick, 30 Jan, p 13, No 14; single-engine fighter with British markings observed over Central Germany, 22 Feb, p 22, No 16; B-17 at Schipol, 24 Feb, p 20, No 17; B-24 reported off Dungeness, 25 Feb, p 21, No 17; aircraft similar to Spitfires seen over Germany, 3 Mar, p 22, No 17; B-17 seen over North Sea, 3 Feb, p 11, No 14.

Amiens

9 AF attack 2 Mar, results, p 13, No 19; RAF attacks 15/16, 16/17 Mar, results, p 10, No 20.

Ancona

15 AF attack 23 Jan, BS No 12; attack 8/9 Feb, BS No 14; attack 16 Feb, BS No 15; attack 24 Mar, BS No 20.

Antwerp

Reconstruction since attack 5 Apr, 1943, p 14, No 14.

Anzio

15 AF attack 12 Feb, BS No 14; attack 1/2, 2 Mar, BS No 17.

Arado-232

Rechlin 104 identified as, p 8, No 14.

Arado-234

Brandenburg 42 identified as, provisional drawing, pp 14-15, No 18.

Arnheim

8 AF attack 22 Feb, BS No 16.

Aschersleben

8 AF attack 22 Feb, BS No 16; results, p 14, No 16; results, photos, p 7, No 17.

Arezzo

15 AF attack 15 Jan, BS No 11; results, p 15, No 12; attack 17, 22 Jan, BS No 12; results, p 16, No 14; attack 14 Feb, BS No 15.

Augsburg

8 AF attack 25 Feb, BS No 16; results, p 10, No 17; attack 16 Mar, BS No 19; attack 25 Feb, results, photos, pp 13-15, No 19; p 10, No 20.

Augsburg 37

Details of, p 8, No 14.

Avord Airfield

8 AF attack 5 Feb, results, p 12, No 15.

B-17

Over Ludwigshafen, photo, p 5, No 11; over Sofia, photo, p 5, No 12; enemy-operated reported during 11 Jan missions, p 7, No 12; enemy-operated seen on 30 Jan at Brunswick, p 13, No 14; enemy-operated seen at Schipol, 24 Feb, p 20, No 17; enemy-operated seen over North Sea, 3 Feb, p 11, No 14.

B

B-24

Over Ludwigshafen, photo, p 5, No 11; enemy-operated reported off Dungeness, p 21, No 17.

Balloons

Operate in conjunction with flak units in Germany, p 18, No 12; large free balloons seen over Brussels, Dison, 4 Feb, p 11, No 14; barrages, details, pp 15-16, No 16.

Belgium

Coal-mine owners fined for laborers' escapes, p 16, No 12.

Bergerac Airfield

8 AF attack 5 Mar, BS No 17; results, p 8, No 18; RAF attack 18/19 Mar, results, p 11, No 20.

Berck-sur-Mer Airfield

9 AF attack 8 Feb, results, p 12, No 15.

Berlin

RAF Nov/Dec attacks, damage assessment as of 21 Dec, p 13, No 11; Nazi leaders' reactions since RAF attacks, p 6, No 12; RAF attacks, further results, p 11, No 15; 8 AF attack 4 Mar, BS No 17; enemy tactics at, p 5, No 18; 8 AF attacks, 6, 8, 9 Mar, BS No 18; enemy tactics at, pp 16-19, No 18; results attacks 6, 8 Mar, p 9, No 18; photo of, pp 6-7, No 19; 8 AF attack 22 Mar, BS No 20.

Bernberg

8 AF attack 20 Feb, BS No 15; results, photos, p 11, No 16; attack 22 Feb, BS No 16.

Bielefeld

8 AF attack 11 Jan, BS No 11; results, p 6, No 11.

Bingen

8 AF attack 20 Mar, BS No 20.

Blitzmaedel

As map-plotters (Ger.), p 10, No 12.

Bologna

15 AF attack 29 Jan, results, p 10, No 15; attack 22 Mar, BS No 20.

Bolzano

15 AF attack 25 Dec, results, p 15, No 12.

Bonn

8 AF attack 4 Mar, BS No 17.

Bordeaux/Merignac Airfield

8 AF attack 5 Jan, results, p 10, No 11.

Bramsche

8 AF attack 23 Mar, BS No 20.

Brandenburg 42

Details of, p 8, No 14; identified as Ar-234, p 14, No 18.

Brandenburg 110

Details of, p 8, No 14.

Brandenburg 112

Details of, p 8, No 14.

Bremen

8 AF attacks 13, 16, 20 Dec, results, p 15, No 12.

Brescia

15 AF attack 14 Feb, results, p 13, No 17.

Brunswick

8 AF attack 11 Jan, BS No 11; results, p 6, No 11; p 15, No 12; enemy tactics at, p 17, No 11; attack 10 Feb, BS No 14; enemy tactics at, p 14, No 15; enemy-operated B-17 seen over on 30 Jan mission, p 13, No 14; attacks 11, 30 Jan, results, p 19, No 14; attack 30 Jan, enemy tactics at, p 10, No 14; attack 20 Feb, BS No 15; results, p 13, No 16; attack 21 Feb, BS No 16; results, p 14, No 16; enemy tactics at, p 22, No 16; attack 29 Feb, BS No 17; attack 9 Mar, BS No 18; attack 15 Mar, BS No 19; attack 23 Mar, BS No 20.

C

C-47

In crash, photo, p 18, No 12; silhouette, Back Cover, No 12.

Cable Bombs

German broadcast describes use of on 11 Jan missions, p 12, No 11; used vs USAAF on 11 Jan, 7 Jan missions, pp 16-17, No 11; details of, diagram, p 9, No 12; seen at Bremen, 16 Dec, p 9, No 12; at Rostock, 20 Feb, p 21, No 16.

Caen/Carpiquet Airfield

8 AF attack 6 Feb, results, p 12, No 15.

Campoleone

15 AF attack 10 Feb, BS No 14.

Campoleone-Cechina

15 AF attack 12/13 Feb, BS No 14, attack 14/15 Feb, BS No 15; attack 15 Feb, BS No 15.

Campoleone-Rocco di Papa Rd.

15 AF attack 17 Feb, BS No 15.

Canino Airfield

15 AF attack 3 Mar, BS No 17.

Cassino Monastery—Cassino

15 AF attack 15 Feb, BS No 15; attack 15 Mar, BS No 19.

Castelfiorentino

15 AF attack 7 Mar, BS No 18.

Cecina

15 AF attack 20 Jan, BS No 12; photo, results, p 11, No 15; attack 16 Feb, BS No 15.

Centocelle Airfield

15 AF attack 13 Jan, BS No 11; results, p 15, No 12; attack 19/20 Jan, BS No 12; results, p 19, No 14.

Ceprano

15 AF attack 23 Jan, BS No 12.

Certaldo

15 AF attack 15 Jan, BS No 11; results, p 15, No 12; attack 18 Jan, BS No 12; attack 16 Feb, BS No 15.

Chaff

Effects of, p 27, No 14.

Chartres Airfield

8 AF attack 2 Mar, BS No 17; results, p 8, No 18; attack 17 Mar, BS No 18.

Chateaudun Airfield

8 AF attack 5-6 Feb, results, photos, p 20, No 14.

Chateauroux/Deols Airfield

RAF attack 10/11 Mar, results, p 10, No 20.

Chateauroux/Martinier Airfield

8 AF attack 5 Feb, results, photo, p 21, No 14.

Ciampino Airfield

15 AF attack 19/20 Jan, BS No 12; results, photo, p 17, No 14.

Cisterna

15 AF attack 10 Feb, BS No 14.

Cisterna-Velletri-Cori

15 AF attack 12/13 Feb, BS No 14; attack 2 Mar, BS No 17.

Civitavecchia

15 AF attack 15 Jan, BS No 11.

Clermont-Ferrand/Aulnat

RAF attack 11/12 Mar, results, p 11, No 20.

Cognac/Chateau-Bernard Airfield

8 AF attack 31 Dec, results, photo, p 8, No 11; ground report, p 7, No 15; attack 2 Mar, BS No 17; attack 5 Mar, BS No 17; results, p 8, No 18.

Cologne

8 AF attack 4 Mar, BS No 17.

Combat Photos

Me-110 destroyed by P-47, pp 16-17, No 11; from fighter command, p 5, No 20.

Combat Reports

By P-47 pilots, pp 20-21, No 12.

Coxyde/Furnes Airfield

Attack 21 Jan, results, p 20, No 14

D

Daimler/Benz Aircraft Engines

Repair shops wrecked at Oslo during 8 AF attack 18 Nov, 1943, photos, p 5, No 14; ground report, p 9, No 18; DB-603, report on, photos, pp 13-14, No 20.

Dernbach

8 AF attack 2 Mar, BS No 17.

Dessau 62

Details of, p 8, No 14.

Dessau 75

Details of, p 8, No 14.

Deventer

8 AF attack 22 Feb, BS No 16.

Dicomano

15 AF attack 16 Feb, BS No 15.

Diepholz Airfield

8 AF attack 21 Feb, BS No 16; results, p 13, No 16; p 10, No 17.

Do-217

Lands self in England, photo, pp 16-17, No 17.

Dusseldorf

8 AF attack 4 Mar, BS No 17.

E

Enschede

8 AF attack 22 Feb, BS No 16.

Erkner

8 AF attack 8 Mar, BS No 18.

F

Fabrica di Roma Airfield

15 AF attack 7 Mar, BS No 18.

Fano

15 AF attack 24 Mar, BS No 20.

Ferrara

15 AF attack 28 Jan, results, p 10, No 15; attack 14 Feb, BS No 15.

Fischbach

8 AF attack 2 Mar, BS No 17.

Fiume

15 AF attack 21 Jan, BS No 12; results, p 16, No 14; attack 24/25 Feb, BS No 16; results, p 8, No 18; attack 26 Mar, BS No 20.

Flak

Operations rooms, pp 17-18, No 12; Heimatflak (Ger. Home Guard), p 9, No 12; towers, German, details and diagrams (PW), p 19, No 16; flak star shells as navigational aid, p 14, No 20; orange rocket flak burst seen near Dutch border on 11 Jan missions, p 17, No 11; youngsters man flak guns in

Flak—(Cont'd.)

Germany, p 9, No 12; effect of inexperienced gun crews, p 3, No 18; new developments in rocket flak, p 27, No 14; changes in disposition since 1 Feb, p 4, No 17; disposition and changes, p 3, No 14; p 3, No 15; p 3, No 16; p 4, No 17; p 3, No 18; p 3, No 19; ground rockets emit sparkling bursts over Hallendorf, 11 Jan, p 17, No 12.

Fliegerfuhrer Atlantik

GAF anti-ship command, p 9, No 14 (PW).

Florence Rd. Junction

15 AF attack 14 Feb, BS No 15.

France

Ball-bearing industry dispersed after Allied air attacks, p 26, No 14.

Frankfurt

8 AF attacks 29 Jan, 4, 8 Feb, enemy tactics at, pp 10-12, No 14; attack 29 Jan, photo, p 15, No 14; attacks 8, 11 Feb, BS No 14; attack 29 Jan, 4 Feb, results, p 10, No 15; enemy tactics at, 11 Feb, p 14, No 15; attacks 2/4 Mar, BS No 17; enemy tactics at, p 21, No 17; attacks 20, 24 Mar, BS No 20.

Frascati

15 AF attack 22 Jan, BS No 12; Marino Rd, 16/17 Feb, BS No 15; Grottoferata area, 17 Feb, BS No 15.

Freekehhorst

8 AF attack 23 Mar, BS No 20.

Friedrichshafen

8 AF attacks 16, 18 Mar, BS No 19; results, p 11, No 20.

Friedrichshafen/Lowenthal

8 AF attack 18 Mar, BS No 19.

Friedrichshafen/Manzell

8 AF attack 18 Mar, BS No 19.

Friedrichshafen/Maybach

8 AF attack 18 Mar, BS No 19.

Furness Airfield

8 AF attack 21 Jan, BS No 12.

Furth

8 AF attack 25 Feb, BS No 19.

FW-190

Reporting modified version, p 11, No 11; observed with in-line engine over Paris on 7 Jan mission, p 16, No 11; bearing British markings, shot down over Germany, 8 Mar, p 18, No 18.

G

GAF

Broadcast of tactics on 11 Jan missions, p 12, No 11; fighter control organization (PW), p 10, No 12; anti-ship command (PW), p 9, No 14; fighter training in (PW) pp 22-23, No 14; air transport

command, p 24-25, No 14; reconnaissance units in Mediterranean (PW), p 25, No 14; airfield development, pp 5-7, No 15; air/sea rescue service, p 9, No 15; estimate of effects of Allied attacks on fighter production, pp 6-9, No 17; torpedo-bombing tactics (PW), pp 15-16, No 17; p. 16, No 20; bomber-observer training (PW), p 12, No 18; report on fighter disposition, graphs, pp 6-7, No 20; operation of Norway-based reconnaissance units (PW), pp 15-16, No 20.

GAF (Offensive activity in UK)

"Reprisal raid" of 21/22 Jan (PW), pp 6-7, No 14; bombing methods used in London offensive (PW), pp 17-18, No 16; description of raid on London (PW), p 17, No 19; summary of February offensive, p 8, No 20; field order for UK mission, p 9, No 20; attack 13, 15 Jan, pp 2-3, No 11; 20, 21 Jan, p 2, No 12; 11, 12, 13 Feb, p 3, No 14; 18, 20 Feb, p 3, No 15; 21, 22, 23, 24, 25 Feb, p 2, No 16; 29 Feb, 1, 5 Mar, p 3, No 17; 13, 14, 15, 16, 17, 19 Mar, pp 2-3, No 19; 21, 22, 23, 24, 26 Mar, p 3, No 20.

GAF (Offensive Activity in Mediterranean)

Attack destroyer near Anzio beach-head 8 Feb, p 3, No 14; attacks 13, 15, 16, 17, 19 Feb in Anzio/Nettuno area, p 3, No 15; attacks 21, 22, 23, 24, 25 in Anzio area, p 3, No 16; attacks 27, 28, 29, 1, 1/2 Mar in Anzio area, p 3, No 17; attack on Allied convoy off Algiers, 8 Mar, p 3, No 18; attack 23/24 Mar in Cassino area, 23 Mar on Vis Island, p 4, No 20.

GAF (Order of Battle)

2/FA GR 5—Staffel of Ju-290s now based at Mont de Maisan, p 1, No 19; I and II/JG 1—moved to Northwest Germany from Holland, p 2, No 20; III/JG 2—now based entirely in Northwest France, p 2, No 20; I/JG 3—moved to Munchen-Gladbach from Northeast France, p 1, No 15; II/JG 3—based at Rotenburg, p 1, No 16; IV/JG 3—to Northwest Germany from Venlo; 10, 11/JG 26—to Germany from Holland, p 2, No 12; 12/JG 26—becomes non-operational, p 2, No 20; II/JG 53—based at Seyring, p 1, No 16; I/JG 300—identified at Bonn/Hangelar, p 1, No 15; I/KG 2—moves to Northwest Germany, p 2, No 20; II/KG 2—moves from Munster-Handorf and Soesterberg to Munster area, p 1,

No 17; V/KG 2—in Lille-Cambrai area becomes non-operational, p 1, No 19; III/KG 2—moves from Gilze/Rijen to Munster, p 1, No 17; I/KG 6—group of Ju-188s moves to Germany from Chievres, p 1, No 19; KG/26—torpedo bomber unit in Mediterranean, p 14, No 17 (PW); II/KG 30—reinforcements from unit to N. Italy, p 2, No 14, in Northwest Germany with Stab. from Italy, p 1, No 19; III/KG 30—becomes non-operational, p 1, No 17; I/KG 40—1st and 2nd Staf. now based in Northwest Germany, p 1, No 14, become non-operational, p 1, No 19; participate in Jan 21/22 raid on London (PW), p 6, No 14; operate with anti-ship command, p 9, No 14 (PW); III/KG 40—operational at Avord, p 2, No 14; III/KG 51—replaces V/KG 2, p 1, No 19; II/KG 54—Geschwader Stab. now operational in Northwest Germany, p 1, No 16; KG/66—Pathfinder Gruppe operating against UK (PW), p 16, No 19; I/KG 76—non operational, p 2, No 14; in Northern Italy, p 2, No 15; 2 staffeln become non-operational, p 2, No 17; I/KG 100—One Staffel based in NW Germany, p 2, No 14, 2 Staffeln fully operational, p 1, No 18; II/KG 100 (Gs. Stab.) operational in S. France, p 2, No 16; III/KG 100, operational in S. France, p 2, No 17; participates in 21/22 Jan raid on London (PW), p 6, No 14; Lehr I and III—become non-operational, p 2, No 17; moved to N. Italy from Greece and Crete, p 2, No 17; III/NJG 1—to Wittmundhafen/Ardorf from Twente/Enschede, p 1, No 18; I/NJG 2—to Vechta from Vechta, Rheine and Wittmundhafen, p 1, No 18; III/NJG 2—to Twente/Enschede from Gilze/Rijen and area, p 1, No 18; I/NJG 4—PW from unit shot down near Nettuno 26 Jan, p 2, No 14; IV/NJG 5—30 night fighters moved from Berlin to Erfurt/Bindersleben, p 21, No 19; I/NJG 6—to Mainz/Finthen from Mannheim and Stuttgart area, p 1, No 14; II/NJG 6—35 night-fighters at Schlesheim, p 1, No 16; 2/Sea Reconnaissance Group 130 moves from Tromsø to Trondheim port, p 2, No 14; Reconnaissance Staffel Ob. d. L., based at Orly, France, p 2, No 14; I/ZG 26—30 t/e day fighters unlocated in Hanover area, p 1, No 16; decreases by 30 day fighters, p 1, No 18; II/ZG 26 based at Hildesheim, p 1, No 15; remains at Hildesheim, p 1, No 18; III/ZG 76—gruppe of t/e fighters at Ottin-gen, p 1, No 16.

Genoa

15 AF attack 11/12 Mar, BS No 18.

Germany

1927 age-group called to service, p 7, No 12; air attacks hamper steel industry, p 16, No 12; wage difficulties caused by air attacks, p 14, No 14; nightly evacuation of Allied targets urged, p 14, No 16.

Gesserthausen

8 AF attack 16 Mar, BS No 19.

Gilze/Rijen Airfield

8 AF attack 23 Jan, BS No 12; enemy tactics at, 23 and 31 Jan, p 11, No 14; attack 10 Feb, BS No 14; attack 14 Feb, BS No 15; attack 19 Mar, BS No 19.

Giulanova

15 AF attack 24 Mar, BS No 20.

Gorizia Airfield

15 AF attack 18 Mar, BS No 19.

Gotha

8 AF attack 20 Feb, BS No 15; attack 24 Feb, BS No 16; results, photos, pp 5 and 10, No 17.

Graz

15 AF attack 19 Mar, BS No 19.

Graz/Thalerof Airfield

8 AF attack 25 Feb, BS No 16.

Guidonia

15 AF attack 20 Jan, BS No 12.

H

Halberstadt

8 AF attack 11 Jan, BS No 11; results, p 6, No 11; ground report, p 13, No 19; attack 22 Feb, BS No 16.

Hallendorf

8 AF attack 11 Jan, BS No 11.

Hamburg

8 AF attack 13 Dec, results, p 10, No 15.

Hamm

8 AF attack 23 Mar, BS No 20.

Handorf

8 AF attack 23 Mar, BS No 20.

Hanover

8 AF attack 31 Jan, results, p 10, No 15; attack 9 Mar, BS No 18.

Helmstedt

8 AF attack 20 Feb, BS No 15; results, p 12, No 16.

Herford

8 AF attack 11 Jan, p 1, No 11.

He-177

Photo of, p 8, No 14; initial use over England (PW), p 6, No 14; used by anti-shipping command (PW), p 9, No 14; improved versions (PW), pp 5-8, No 16.

He-280

Details, provisional drawing, pp 10-11, No 19.

I

Iesi

15 AF attack 22 Jan, BS No 12.

Istres/le Tube Airfield

15 AF attack 21 Jan, BS No 12; results (also 24 Jan), p 19, No 14; ground report, p 7, No 15.

Italy

Effects of air attacks on railways, p 26, No 14.

J

Jafu Holland-Ruhr

Fighter control organization (PW), p 10, No 12.

Japan

Propaganda *re* Marshalls, p 6, No 12; Japs on Makin, p 23, No 12; counter-radar measures, p 23, No 14.

Jet-propelled aircraft

German developments, photos, drawings, pp 8-12, No 19.

Ju-88

New armament, photo, p 13, No 20.

K

Kiel

8 AF attack 5 Jan, results, p 11, No 11; M-17s used over, photos, pp 14-15, No 11.

Klagenfurt

15 AF attack 16 Jan, photos, results, p 18, No 14; attack 19 Mar, BS No 19.

Knaben

8 AF attack 16 Nov, ground report, p 10, No 11.

Knin

15 AF attack 19 Mar, BS No 19.

Konigslutter

8 AF attack 11 Jan, BS No 11.

L

Landes de Bussac Airfield

8 AF attack 31 Dec, results, p 10, No 11; attack 5 Mar, BS No 17.

Landsberg Airfield

8 AF attack 18 Mar, BS No 19; results, p 12, No 20.

La Roche Airfield

8 AF attack 5 Mar, BS No 17.

Lavariano Airfield

15 AF attack 18 Mar, BS No 19.

Lechfeld Airfield

8 AF attack 18 Mar, BS No 19; modified versions of Me-410s seen at (photos), p 12, No 19; attack 18 Mar, BS No 19; results, p 11, No 20.

Lechfeld 42

Details of, photo, p 15, No 18; identified as Me-262, p 19, No 18.

Leeuwarden

9 AF attack 24 Feb, results, p 10, No 20.

Leipzig

RAF attack 18/19 Oct, results, p 6, No 12; attack 3/4 Dec, results, p 16, No 12; 8 AF attack 20 Feb, BS No 15.

Leipzig/Heiterblick

8 AF attack 20 Feb, results, photo, p 12, No 16.

Leipzig/Mockau

8 AF attack 20 Feb, results, photo, p 10, No 16.

Leiturm

Flak Director Tower (Ger), p 19, No 16.

Le Mans

Reconstruction since attacks 29 June, 4 July 1943, p 14, No 14; RAF attack 7/8 Mar, results, p 13, No 19.

Leuchtpfad

Flare path (Ger), p 17, No 15.

Light Phenomena

Explanation, p 18, No 17; observed by USAAF on missions, p 10, No 14; p 21, No 16; pp 20-21, No 17; p 18, No 20; seen by RAF, p 14, No 19.

Limburg

8 AF attack 2 Mar, BS No 17.

Limoges

RAF attack 8/9 Feb, results, p 12, No 15; ground report, p 11, No 20.

Lingen

8 AF attack 21 Feb, BS No 16; results, p 13, No 16.

London

"Reprisal raids" on (PW), pp 6-7, No 14; PW description of raid over, p 17, No 19; dates of GAF attacks on (see GAF offensive activity over UK).

Lowenthal 70

Details of, p 8, No 14.

Lowenthal 90

Details of, p 8, No 14.

Ludwigshafen

B-17s, B-24s over, photo, p 5, No 11; 8 AF attack 7 Jan; enemy tactics at, p 16, No 11; attacks 30 Jan, 7 Dec, results, p 16, No 14; 8 AF attack 11 Feb, BS No 14; enemy tactics at, p 14, No 15; results, p 8, No 18; attack 2 Mar, BS No 17.

M

M-17 (US Incendiary Bomb)

Used at Kiel on 5 Jan 8 AF mission, photo, pp 14-15, No 11.

Magdeburg

RAF attack 21/22 Jan, results, p 9, No 16.

Makin

Jap occupation of, pp 22-23, No 12

Maniago Airfield

15 AF attack 18 Mar, BS No 19; attack 26 Mar, BS No 20.

Mannheim

8 AF attack 20 Mar, BS No 20.

Maribor

15 AF attack 7 Jan, 23/24 Jan, results, p 10, No 15.

Marignane

RAF attack 9/10 Mar, results, p 13, No 19.

Mayer, Egon

Death of, p 17, No 19.

Memmingen Airfield

8 AF attack 18 Mar, BS No 19.

Meppen

8 AF attack 11 Jan, BS No 11; results, p 11, No 11; p 10, No 15.

Me-109

Comparison with P-51 (photos), p 19, No 12.

Me-110

Destroyed by P-47, combat photos, pp 16-17, No 11; with special armament (photo), p 12, No 14.

Me-163

Details, photos, pp 8-9, No 19.

Me-210

Equipped with MG-131, photos, details, pp 18-19, No 11; Me-210 "R," mentioned in German broadcast, p 11, No 11.

Me-262

"Lechfeld 42" identified as, p 19, No 18; details, provisional drawing, pp 10-11, No 19.

Me-323

Aileron motor found in, photos, pp 15-16, No 18.

Me-410

Remote control rear guns on, photos, details, pp 18-19, No 11; radio installation on, photo, p 20, No 16; torpedo carrying, p 14, No 17; modified versions seen at Lechfeld, p 12, No 19.

Metkovic

15 AF attack 19 Mar, BS No 19.

Meulan-les-Mureaux

RAF attack 2/3 Mar, results, p 8, No 18.

MG-131

Installed on Me-210, Me-410, details, photos, pp 18-19, No 11.

Modena

15 AF attack 14 Feb, BS No 14; results, p 12, No 17.

Montaldo di Castro

15 AF attack 15 Jan, BS No 11; attack 2/3 Mar, BS No 17.

Monterondo

15 AF attack 10 Feb, BS No 14.

Mostar

15 AF attack 14 Jan, BS No 11.

Motte, die (Ger.)

"The Moth"—tailless aircraft at Peenemunde (PW), p 19, No 17.

Munich

8 AF attack 18 Mar, BS No 19; results, p 11, No 20.

Munster

8 AF attack 11 Mar, BS No 18; attack 23 Mar, BS No 20.

N**Nancy/Essey Airfield**

8 AF attack 24 Mar, BS No 20.

Nauen

8 AF attack 9 Mar, BS No 18.

Neu Beckum

8 AF attack 23 Mar, BS No 20.

Neuss

8 AF attack 5 Jan, results, p 10, No 11.

Nienburg

8 AF attack 5 Jan, results, p 10, No 11.

Nijmegen

8 AF attack 22 Feb, BS No 16.

O**Oberpfaffenhoffen Airfield**

8 AF attack 18 Mar, BS No 19; results, p 12, No 20.

Offenbach

8 AF attack 2 Mar, BS No 17.

Orbetello M/Y

15 AF attack 2/3 Mar, BS No 17; results, p 11, No 20.

Orleans/Bricey Airfield

8 AF attack 5 Feb, p 20, No 14.

Orvieto Airfield

15 AF attack 7 Mar, BS No 18.

Oschersleben

8 AF attack 11 Jan, BS No 11; results, p 6, No 11; enemy tactics at, p 17, No 11; further results, photo, p 11, No 12; 8 AF attack 20 Feb, BS No 15; results, p 11, No 16; attack 22 Feb, BS No 16.

Oslo/Kjeller

8 AF attack 18 Nov 1943, ground report, p 9, No 18.

Osnabruck

8 AF attack 11 Jan, BS No 11; 23 Mar, BS No 20.

Ossopo

15 AF attack 15 Jan, BS No 11.

Ossun Factory Airfield

RAF attack 10/11 Mar, p 10, No 20.

P**P-47**

Destroys Me-110, combat photos, pp 16-17, No 11; combat reports, pp 20-21, No 12; operational record in So. Pacific theater, p 21, No 12; combat films, p 5, No 20.

P-51

Comparison with Me-110, photos, p 19, No 12.

P.A.C. Projectile

German shipborne version, p 14, No 20.

Padua

15 AF attack 7/8 Feb, BS No 14; attack 11 Mar, BS No 18; attacks 22, 23/24 Mar, BS No 20.

Paris/Bois Colombes

8 AF attack 31 Dec, results, p 13, No 17; ground photos, pp 12-13, No 17.

Paris/Ivry

8 AF attack 31 Dec, results, photo, p 7, No 11; ground report, p 9, No 16; ground photos, pp 10-11, No 18.

Pas de Calais (special military targets)

8 AF attack 14 Jan, BS No 11; enemy tactics at, p 7, No 12; attack 21 Jan, BS No 12; attacks 8, 11, 12, 13 Feb, BS No 14; enemy tactics at, 12, 13 Feb, p 15, No 15; attack 15 Feb, BS No 15; enemy tactics at, p 15, No 15; attacks 28, 29 Feb, BS No 17; enemy tactics at, p 21, No 17; attacks 11, 12 March, BS No 18; enemy tactics at, p 19, No 18; attack 19 March, BS No 19; attacks 21, 26 Mar, BS No 20; enemy tactics at, pp 18-19, No 20.

Pathfinders (Ger.)

Techniques used over UK, diagrams (PW), p 17, No 15; confirmation of previous details, p 17, No 17; new tactics (PW), pp 16-17, No 19.

Peenemunde 15

P 8, No 14.

Peenemunde 20

P 8, No 14; photo, p 10, No 19.

Peenemunde 30

Details of, p 8, No 14; identified as Me-163, pp 8-9, No 19.

Peine

8 AF attack 11 Jan, BS No 11.

Perugia Airfield

15 AF attack 13 Jan, BS No 11; attack 19 Jan, BS No 12.

Pescara

15 AF attack 24 Mar, BS No 20.

Peterhausen

15 AF attack 22 Feb, BS No 16.

Pfullendorf

8 AF attack 18 Mar, BS No 19.

Piaggio M/Y

15 AF attack 18 Jan, BS No 12.

Piambino

15 AF attack 8 Feb, results, p 9, No 16.

Piraeus

15 AF attack 11 Jan, BS No 11 ; enemy tactics at, p 7, No 12.

Pisa

15 AF attack 21 Jan, BS No 12 ; attack 14 Feb, BS No 15.

Pisich

Torpedo (Ger), p 14, No 17.

Pistoia

15 AF attack 18 Jan, BS No 12 ; results, p 12, No 15.

Poggibonsi M/Y

15 AF attack 18 Jan, 23 Jan, BS No 12 ; attacks 15, 16 Feb, BS No 15 ; attack 7 Mar, BS No 18.

Poix

8 AF attack 14 Jan, results, photo, p 15, No 12, ground report, p 16, No 14 ; attack 13 Mar, BS No 19.

Pola

15 AF attack 9 Jan, results, p 10, No 11 ; attack 25 Feb, BS No 16.

Pontecorvo

15 AF attack 22/23 Jan, BS No 12.

Pontedera M/Y

15 AF attack 18, 21, 22 Jan, BS No 12 ; results, p 16, No 14 ; attack 14 Feb, BS No 14 ; results, p 9, No 16 ; p 7, No 18.

Pontassieve M/Y

15 AF attack 17 Jan, BS No 12 ; results, p 10, No 15 ; attack 16 Feb, BS No 15 ; attacks 7, 11 Mar, BS No 18 ; results (7 Mar), p 11, No 20.

Porto Civitanova

15 AF attack 15 Jan, BS No 11 ; attacks 21/23 Jan, BS No 12.

Prato

15 AF attack 15 Jan, BS No 11 ; attacks 17, 21 Jan, BS No 12 ; results, p 18, No 14 ; attacks 14, 16 Feb, BS No 15 ; attacks 7, 11 Mar, BS No 18 ; attack 7 Mar, results, p 11, No 20.

Propaganda, Enemy

On 11 Jan air battle, p 12, No 11.

Q**Quackenbruk**

8 AF attack 21 Feb, BS No 16.

R**Racketen-Vergeltungs-Bombe**

Rocket retribution bomb (Ger) (PW), p 19, No 17.

Radar

Japanese counter-radar measures, p 23, No 14.

Radio Target Beacon (Ger)

Details, p 18, No 15.

Railways

Effects of Allied air attacks on Italian railways, p 26, No 14.

Rechlin 33

Details of, p 8, No 14.

Rechlin 60

Details of, p 8, No 14.

Rechlin 104

Details of, p 8, No 14.

Recognition Silhouettes

Waco Glider CG 4A, back cover, No 11 ; C-47, back cover, No 12.

Regensburg

Reconstruction since 8 AF attack 17 Aug, p 14, No 14 ; /Obertrauling, reconnaissance photo, p 13, No 16 ; attack 25 Feb, BS No 16 ; results, photo, p 11, No 17 ; /Prufening, attack 25 Feb, results, p 10, No 17,

Reggio Emilia

15 AF attack 8 Jan, results, p 16, No 14.

Rheine/Hopstein Airfield

8 AF attack 21 Feb, BS No 16.

Rieti

15 AF attack 23 Jan, BS No 12 ; results, p 11, No 14.

Rimini

15 AF attack 21 Jan, BS No 12 ; results, p 11, No 14 ; p 9, No 16 ; attacks 8/9 Feb, BS No 14 ; attacks 22, 24, 26 Mar, BS No 20.

Rjukan

8 AF attack 16 Nov, ground photos, pp 12-14, No 12.

Rockets, Airborne

Summary of use against 8th AF, pp 5-6, No 12.

Rome/Ciampino Airfield

(see Ciampino)

Rome/Fabrica di Roma Airfield

15 AF attack 3 Mar, BS No 17.

Rome/Littorio RR Yards

15 AF attack 3 Mar, BS No 17.

Rome/Tibburtina RR Yards

15 AF attack 3 Mar, BS No 17.

Rostock

8 AF attack 20 Feb, BS No 15 ; results, p 11, No 16 ; attack 24 Feb, BS No 16.

Rumanian Air Force

Defending Ploesti, p 2, No 17.

S**Saarbrücken**

8 AF attack 11 Feb, BS No 14.

Salon Airfield

15 AF attack 21 Jan, BS No 12 ; ground report, p 7, No 15.

San Stefano Harbor

15 AF attack 2/3 Mar, BS No 17 ; attacks 7/8 Mar, BS No 18.

Santa Maria

15 AF attack 20 Feb, BS No 15.

Schweinfurt

8 AF attack 24 Feb, BS No 16 ; results, p 7, No 18 ; attack 24 Mar, BS No 20.

Seenotdienst

German Air/Sea Rescue Service, p 9, No 15.

Senigallia

15 AF attack 24 Mar, BS No 20.

Sibenik

15 AF attack 22 Feb, BS No 16 ; results, p 10, No 17 ; attack 24 Mar, BS No 20.

Siena M/Y

15 AF attack 23 Jan, BS No 12 ; attack 16 Feb, BS No 15.

Soesterberg Airfield

8 AF attack 17 Mar, BS No 19.

Skoplje

15 AF attack 10 Jan, BS No 11 ; results, p 10, No 11.

Sofia

15 AF attack 10 Jan, BS No 11 ; results, p 16, No 14 ; enemy tactics at, p 7, No 12 ; B-17s over, photo, p 5, No 12 ; attacks 15/16 Mar, 16/17 Mar, BS No 19 ; attacks 24/25 Mar, BS No 20.

Split

15 AF attack 24 Mar, BS No 20.

Steyr

15 AF attacks 22, 23, 24/25 Feb, BS No 16 ; photos, results, pp 6-7, No 18.

St. Andre de L'Eure Airfield

8 AF attack 6 Feb, results, p 12, No 15.

St. Dizier/Robinson Airfield

8 AF attack 24 Mar, BS No 20.

St. Jean d'Angely

8 AF attack 31 Dec, final assessment, p 10, No 11.

Stuttgart

8 AF attack 5 Jan, results, p 10, No 11; RAF attack 20/21 Feb, results, p 9, No 16; 8 AF attack 25 Feb, results, p 13, No 17; p 10, No 20.

T**Tactics, Enemy**

At Ludwigshafen, 7 Jan, at Oschersleben, Brunswick, 11 Jan, pp 16-17, No 11; at Sofia, 10 Jan, at Piraeus, 13 Jan, over France, 14 Jan, p 7, No 12; at Frankfurt, 29 Jan, at Brunswick, 30 Jan, over Holland, 31 Jan, at Frankfurt, 4 and 7 Feb, at Wilhelmshaven, 3 Feb, over France, 5/6 Feb, pp 10-13, No 14; at Brunswick, 10 Feb, over Germany, 11 Feb, over France, 12/13 Feb, at Gilze/Rijen, 14 Feb, over Belgium/France, 15 Feb, pp 14-15, No 15; over Central, Northern Germany, Austria, Denmark, 20-24 Feb, pp 21-23, No 16; over Germany, 24/25 Feb, at Pas de Calais, 28 Feb, over Germany, Holland, 29 Feb, over Germany, France, 2/3 Mar, pp 20-22, No 17; Summary of 8 AF opposition in Feb, p 5, No 18; at Berlin, 4, 6, 8, 9 Mar, p 5, 16-17, No 18; Summary of 15 AF opposition, p 5, No 19; at Pas de Calais, 13 Mar, at Brunswick, 15 Mar, at Augsburg, 17 Mar, report on enemy tactics in Mediterranean, p 18, No 19; at Friedrichshafen, 18 Mar, Pas de Calais, 19 Mar, 21 Mar, over Germany 22, 23 Mar, at Pas de Calais 28 Mar, pp 18-19, No 20.

Terracina

15 AF attack 22 Jan, BS No 12.

Tivoli

15 AF attack 10 Feb, BS No 14.

Torpedo-Bombing

GAF tactics (PW), pp 14-15, No 17; p 16, No 20.

Torpedo Kommandogeraet

Torpedo control set (Ger), p 15, No 17.

Toulon

15 AF attacks 7 and 11 Mar, BS No 18; attacks 4 Feb, 7, 11 Mar, results, p 8, No 18; p 13, No 19.

Tours

8 AF attack 5 Jan, results, p 10, No 11; attack 5 Feb, results, p 12, No 15; ground report, p 8, No 15; attack 5 Jan, ground report, p 11, No 20.

Trier Airfield

8 AF attack 11 Feb, BS No 12.

Turm Flak Abteilung

Tower Flak Battalion (Ger), p 19, No 16.

Tutow

8 AF attack 20 Feb, BS No 15.

U**United States Strategic Air Forces in Europe**

Organization of, p 5, No 11.

Udine Airfield

15 AF attack 18 Mar, BS No 19.

Ulm

8 AF attack 16 Mar, BS No 19; results, p 11, No 20.

V**Velletri**

15 AF attack 10 Feb, BS No 14; attack 2 Mar, BS No 17.

Vemork Power Station

Damaged in 16 Nov attack, ground photos, pp 12-13, No 12.

Verona

15 AF attack 28 Jan, results, p 10, No 15; attack 8 Feb, BS No 14; attack 22 Mar, BS No 20.

Vicenza R/R

15 AF attack 14 Feb, BS No 15.

Vienna

15 AF attack 17 Mar, BS No 19.

Villacoublay Airfield

8 AF attack 5 Feb, results, p 11, No 15.

Villa Orba

15 AF attack 16 Jan, BS No 11.

Villa Perosa

15 AF attack 3 Jan, results, photo, p 12, No 15.

Viterbo

15 AF attack 8 Feb, BS No 14; attack 3 Mar, BS No 17; attack 7 Mar, BS No 18; attack 8 Feb, results, p 8, No 18.

Vorden Airfield

8 AF attack 21 Feb, BS No 16; results, p 12, No 16.

Vrattsa

15 AF attack 24 Jan, results, p 10, No 15.

W**Waco Glider CG-4A**

Silhouette, Back Cover, No 11

Wesel

8 AF attack 14 Jan, p 2, No 11.

Wildau

8 AF attack 8 Mar, BS No 18.

Wilhelmshaven

8 AF attack 3 Feb, enemy tactics at, p 11, No 14; results, p 10, No 15; attack 3 Mar, BS No 17.

Wiesbaden

8 AF attack 8 Feb, BS No 14.

Wittenberge

8 AF attack 6 Mar, BS No 18.

Y**Yerville area**

8 AF attack 28 Feb, BS No 17.

Z**Zagreb Airfield**

15 AF attack 22 Feb, BS No 16.

Zara

15 AF attack 16 Jan, BS No 11; results, p 17, No 14; attack 22/25 Feb, BS No 16; results, p 10, No 17; attack 3/4 Mar, BS No 17.

Zuider Zee

8 AF attack on shipping, 15 Mar, BS No 19.



THE SCORE TO DATE

CLAIMS

	EIGHTH AIR FORCE		FIFTEENTH AIR FORCE	
	This Week	To Date**	This Week	To Date
Destroyed	76	6,229	158	5,683*
Probable	10	1,518	54	—†
Damaged	28	3,101	26	—†

LOSSES

	This Week	Total
Eighth Air Force... ..	65	2,275
Fifteenth Air Force	53	1,183

* Includes 2,588 e/a destroyed on the ground as of 29 Feb., 1944.

† Not available.

** Includes evaluated claims through 26 March.

BOMBING SUMMARY, Week Ending 2 April

Eighth Air Force :

TARGET	DATE	AIRCRAFT	TOTAL WEIGHT
Biarritz A/F	27 Mar.	49 B-24s	130.0 tons
Bordeaux/Merignac A/F	27 Mar.	124 B-24s	294.0 tons
Brunswick	29 Mar.	193 B-17s	396.0 tons
Cazaux A/F	27 Mar.	117 B-17s	271.0 tons
Chartres A/F	27 Mar.	67 B-17s	198.0 tons
Chartres A/F	28 Mar.	61 B-17s	150.0 tons
Chateaudun A/F	28 Mar.	127 B-17s	300.0 tons
Dijon-Longvic A/F	28 Mar.	117 B-17s	311.5 tons
Eindhoven A/F	30 Mar.	12 P-47s	2.8 tons
Grafenhausen	1 Apr.	9 B-24s	23.0 tons
La Rochelle A/F	27 Mar.	59 B-17s	155.0 tons
Mont-de-Marsan A/F	27 Mar.	47 B-24s	137.0 tons
Pas de Calais	29 Mar.	30 B-24s	115.0 tons
Pau/Pont Long A/F	27 Mar.	72 B-24s	183.0 tons
Pforzheim... ..	1 Apr.	101 B-24s	297.0 tons
Reims/Champagne A/F	28 Mar.	59 B-17s	175.0 tons
Schaffhausen	1 Apr.	38 B-24s	96.0 tons
Soesterberg A/F	30 Mar.	12 P-47s	2.8 tons
St. Jean d'Angely A/F	27 Mar.	55 B-17s	165.0 tons
Stedorf	29 Mar.	18 B-17s	37.4 tons
Strasbourg Area	1 Apr.	17 B-24s	68.0 tons
Tours A/F	27 Mar.	74 B-17s	207.0 tons
Tours/St Pierre des Corps	27 Mar.	35 B-17s	107.0 tons
Unterliss	29 Mar.	18 B-17s	41.6 tons
T/O in Germany	27 Mar.	2 B-17s	7.0 tons

Total for Week ... 3,870.1 tons
Total to Date ... 97,437.5 tons

Fifteenth Air Force :

Bihac M/Y	2 Apr.	28 B-24s	61.0 tons
Bolzano M/Y	28 Mar.	155 B-24s	412.0 tons
Brod M/Y	2 Apr.	29 B-17s	87.0 tons
Cesano	29/30 Mar.	1 Wellington	2.0 tons
Cesano	28 Mar.	3 B-24s	9.0 tons
Fano	28 Mar.	3 B-24s	9.0 tons
Fano	29/30 Mar.	3 Wellingtons	6.0 tons
Imotski	30 Mar.	39 B-17s	117.0 tons
Mestre M/Y	28 Mar.	176 B-24s	475.5 tons
Milan M/Y	28 Mar.	63 aircraft	104.0 tons
Milan M/Y	29 Mar.	131 B-24s	326.0 tons
Mostar A/F	2 Apr.	38 B-24s	70.0 tons
Piombino	1/2 Apr.	15 Wellingtons	33.0 tons
Rimini M/Y	28 Mar.	3 aircraft	4.0 tons
Sofia	29/30 Mar.	64 aircraft	133.0 tons
Sofia	30 Mar.	114 B-17s, 253 B-24s	975.0 tons
Steyr	2 Apr.	126 B-17s, 287 B-24s	938.0 tons
Turin M/Y	29 Mar.	103 B-17s	306.0 tons
Varese	1/2 Apr.	56 aircraft	92.3 tons
Verona M/Y	28 Mar.	110 B-17s	561.5 tons
T/O in Italy	1/2 Apr.	3 aircraft	6.0 tons

Total for Week ... 4,727.3 tons
Total to Date ... 102,931.3 tons

