



TENTH SUPPLEMENT

TO

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WEDNESDAY, 1 JANUARY, 1919.

*Air Ministry,  
1st January, 1919.*

The Secretary of State for the Royal Air Force has received the following Despatch from Major-General Sir H. M. Trenchard, K.C.B., D.S.O., Commanding the Independent Force, Royal Air Force:—

MY LORD,

I have the honour to submit the following report on the work of the Independent Air Force from the 5th June to the signing of the Armistice on the 11th November, 1918.

I have also mentioned in the earlier part of this report the work done in the attack on Germany by the squadrons from a base south-east of Nancy before the establishment of the Independent Air Force.

In May, 1918, you informed me that you considered it advisable to constitute an Independent Force to undertake the bombing of the industrial centres of Germany.

You further intimated to me that you intended to place the whole of the British effort in attacking Germany from the air under my command, and that it would be probable that squadrons would be available to carry out this

work from England, as well as from the eastern area of France.

On the 2<sup>nd</sup> May, 1918, I proceeded to the Nancy area, where the 8th Brigade, R.A.F., under the local command of Brigadier-General C. L. N. Newall, consisting of:—

- No. 55 Squadron, De Hav. 4, 275 h.p. Rolls Royce;
- No. 99 Squadron, De Hav. 9, 200 h.p. B.H.P.;
- No. 100 Squadron, F.E. 2b, 160 h.p. Beardmore;
- No. 216 Squadron, Handley-Page, 375 h.p. Rolls Royce;

was already established under Field-Marshal Sir Douglas Haig.

With the exception of No. 99 Squadron, this Force had been in this area since the 11th October, 1917.

I took over from Field-Marshal Sir Douglas Haig the tactical command of this Force on the 5th June, and the administrative and complete control on the 15th June, 1918.

From the 11th October, 1917, to the 5th June, 1918, this small Force had, in spite of a very severe winter, carried out no less than

142 raids. Fifty-seven of these raids were made in Germany, and included night and day attacks on Cologne, Stuttgart, Mannheim, Mainz, and Coblenz. Long-distance raids had also been carried out against Namur, Charleroi and Liege, in order to help in attacking the enemy's communications to the Western Front.

It should be remembered that No. 216 Squadron (at that time R.N.A.S.) was hastily formed, and was not equipped until October, 1917. No. 100 Squadron was only equipped with short-distance machines, and No. 99 Squadron only joined in May, 1918.

No. 55 Squadron was equipped solely with short-distance machines, which had an air endurance of 3½ hours only. But the squadron itself rectified this to the best of its ability by adding extra petrol tanks to the machines, which gave them an air endurance of 5½ hours.

The work during last winter called for exceptional efforts of endurance and perseverance on the part of the commanders, pilots and observers.

Preparatory work on the construction of aerodromes, with a view to accommodating a larger force, had been undertaken before my arrival, and had been handled with zeal and tact by the General Officer Commanding the 8th Brigade. The work accomplished by General Newall formed a foundation upon which I was at once able to build in making arrangements to accommodate an increased number of squadrons.

In aviation it is essential that the technical and administrative controls should be under one command, as the work to be carried out nearly always entirely depends on the administration of the Force. As it had been decided to separate the tactical control of this Force from the British Armies operating in France, it was therefore necessary to separate the administrative control as well; and, in my opinion, it became likewise necessary to constitute all the administrative services on an independent basis, in order to make the Air Force completely independent.

This involved the formation of a large staff to deal with the multifarious matters connected with the formation and the maintenance in the field of an aerial force.

In addition to this, the Anti-Aircraft Defence and Searchlights came under my command.

By the 26th June the staff for the above-mentioned services had been assembled and organised and were capable of maintaining the Independent Air Force.

I take this opportunity of mentioning that the Independent Force was operating throughout in the zone of the group of the French Armies of the East under the command of General de Castlenau, to whom I am indebted for the very valuable assistance which he and his staff gave me and for advice which helped me over the many difficulties inseparable from an organisation of such a kind. In fact, without his assistance it would have been almost impossible to have made an efficient organisation.

I should also like to mention that the whole of the administrative services were provided by Field-Marshal Sir D. Haig from the British Armies in the field. The British Armies in the north provided me with all the personnel and material that was necessary to maintain and organise and operate the Inde-

pendent Force, apart from technical aeroplane supplies.

My first work was to at once push on and arrange for the accommodation of a Force in the neighbourhood of sixty squadrons. This was a much larger task than may appear at first sight.

The country is throughout hilly and woody, and where there are any level places they consist of deep ridge and furrow, there being as much as three feet six inches between furrow and ridge.

The aerodromes had to carry heavy machines and heavy bomb loads; in order to enable this to be done, draining work on a large scale had to be very carefully carried out, and arrangements had to be made for a large installation of electrical power for workshops and lighting and petrol in order to save transport.

This work was practically completed by the 1st November, 1918.

It will be within your recollection that in the past I had referred to the necessity for equipping the British Expeditionary Force on the Western Front with sufficient aircraft to hold and beat the German aerial forces on the Western Front; that the bombing of Germany was a luxury till this had been accomplished, but that, once this had been accomplished, it became a necessity. That is to say, it became necessary to attack what I may call the German Army in Germany, and to strike at its most vital point—its sources of supply; and the Independent Force was formed with this object.

The question I had to decide was how to use this Force in order to achieve the object, *i.e.*, the breakdown of the German Army in Germany, its Government, and the crippling of its sources of supply.

The two main alternative schemes were:—

1. A sustained and continuous attack on one large centre after another until each centre was destroyed, and the industrial population largely dispersed to other towns, or

2. To attack as many of the large industrial centres as it was possible to reach with the machines at my disposal.

I decided on the latter plan, for the following reasons:—

(i.) It was not possible with the forces at my disposal to do sufficient material damage so as to completely destroy the industrial centres in question.

(ii.) It must be remembered that, even had the Force been still larger, it would not have been practical to carry this out unless the war had lasted for at least another four or five years, owing to the limitations imposed on long-range bombing by the weather.

The weather during June, July and August was extremely favourable for long-distance bombing, but during September, October and the first ten days of November it could have hardly been worse for this particular work. Day after day attempts were made to try to reach the long-distance targets, but the wind was generally too strong; or, if there was no wind, heavy rain and fog prevailed by day and dense mist by night, which lasted often until ten or eleven o'clock the next morning. Often the nights were perfect, but dense white mist completely obliterated the ground, making it impossible for machines to ascend.

Besides this, there are always a large number of technical difficulties to overcome which

still further interfere with the continuity of long-range bombing.

By attacking as many centres as could be reached, the moral effect was first of all very much greater, as no town felt safe, and it necessitated continued and thorough defensive measures on the part of the enemy to protect the many different localities over which my force was operating.

At present the moral effect of bombing stands undoubtedly to the material effect in a proportion of 20 to 1, and therefore it was necessary to create the greatest moral effect possible.

I also recommended, as you will recollect, that the proportion of day bombing squadrons in the Force should be slightly larger than that of night bombing squadrons, as I considered that, although day bombing squadrons suffer higher casualties than night bombing squadrons, at the same time, if day bombing is excluded, at least four-fifths of the value of night bombing must necessarily be wasted, owing to the fact that the enemy can then make his arrangements to work by day and live at a distance by night, and take many other similar defensive steps.

Also, if the bombing had been carried out exclusively by night it would not have caused the enemy to make such a large use of his men and material in defensive measures, and therefore it would not have affected the Western Front to such an extent as it did.

Though night bombing is the safer, many mistakes are made at night in reaching the locality it has been decided to bomb.

My Intelligence Department provided me with the most thorough information on all targets such as gas factories, aeroplane factories, engine factories, poison-gas factories, etc., each target having a complete detailed and illustrated plan, and maps were prepared of every target that was within reach. These were supplemented in a large way by the aerial photographs taken by reconnaissance machines.

Before it was possible to attack Germany successfully it was necessary to attack the enemy's aerodromes heavily in order to prevent his attacking our aerodromes by night, and by destroying his machines to render his attacks by day less efficacious. I considered that it was probable during the spring and early summer of 1919 that at least half my force would be attacking the enemy's aerodromes, whilst the other half carried out attacks on long-distance targets in Germany.

It was also necessary several times during the period the Force operated to carry out attacks in conjunction with the Armies on the enemy's communications.

I also had to decide, when it was impossible for squadrons to reach their objectives well in the interior of Germany, what alternative objective should be attacked, and which attacks would have the greatest effect in hastening the end of hostilities. I decided that railways were first in order of importance, and next in importance the blast furnaces.

The reason of my decision was that the Germans were extremely short of rolling stock, and also some of the main railways feeding the German Army in the West passed close to our front, and it was hoped that these communications could be seriously interfered with, and the rolling stock and trains carrying reinforcements or reliefs or munitions destroyed. They were also fairly easy to find at night.

I chose blast furnaces for the second alternative targets, as they were also easy to find at night, although it was difficult to do any really serious damage to them owing to the smallness of the vital part of the works.

On my arrival in the Nancy area the 8th Brigade consisted of those squadrons shown above. Additional squadrons arrived on the dates as shown:—

- No. 104 Squadron, De Hav. 9, B.H.P., 23rd May.
- No. 97 Squadron, Handley Page, Rolls Royce, 9th August.
- No. 215 Squadron, Handley Page, Rolls Royce, 19th August.
- No. 115 Squadron, Handley Page, Rolls Royce, 31st August.
- No. 110 Squadron, De Hav. 10, Liberty, 31st August.
- No. 45 Squadron, Sopwith Camel, 22nd Sept.

It must be remembered that new squadrons could not be used for work over the line until three weeks after their arrival, as during this period they were receiving their final training, which can only be carried out at the front.

No. 45 Squadron was intended to attack the enemy's scouts many miles over the line. It was necessary to re-equip this squadron with longer-range scouts after I received it, but as these machines did not arrive before the Armistice was signed the squadron was only used for attacking individual hostile machines which crossed our lines.

During August No. 100 Squadron, which was armed with F.E. 2b short-distance machines, commenced re-equipping with Handley Pages. While it was being re-equipped—which process took nearly the whole month—scarcely any work could be carried out by the squadron.

Below are a few interesting figures:—

The total weight of bombs dropped between the 6th June and the 10th November was 550 tons, of which 160 tons were dropped by day and 390 tons by night. Of this amount no less than 220½ tons were dropped on aerodromes. This large percentage was due to the necessity of preventing the enemy's bombing machines attacking our aerodromes and in order to destroy large numbers of the enemy's scouts on their aerodromes, as it was impracticable to deal with them on equal terms in the air. I think this large amount of bombing was thoroughly justified when it is taken into consideration that the enemy's attacks on our aerodromes were practically negligible, and not a single machine was destroyed by bombing during the period 5th June to 11th November.

In addition to this the following objectives were attacked:—

- Baalon.
- Baden.
- The Black Forest.
- Bonn.
- Cologne.
- Coblenz.
- Darmsdatt.
- Duren.
- Dillingen.
- Frankfurt.
- Forbach.
- Hagendengen.
- Heidelberg.
- Hagenau.
- Kaiserlautern.

Karlsruhe.  
 Karlsruhe.  
 Ludwigshafen.  
 Landau.  
 Mainz.  
 Mannheim.  
 Lahr.  
 Lumes.  
 Luxemburg.  
 Oberndorf.  
 Offenburg.  
 Pforzheim.  
 Pirmaisens.  
 Rastatt.  
 Rombas.  
 Rottweil.  
 Sallingen.  
 Saarburg.  
 Saarbrücken.  
 Stuttgart.  
 Treves.  
 Weisbaden.  
 Worms.  
 Voelkingen.  
 Wadgassen.  
 Zweibrücken.

And other miscellaneous targets.

It must also be remembered that of the 109 machines which were missing, the majority dropped bombs on targets before landing. The amount of bombs dropped by these machines is not included in the above figures.

In June the longest distance flown out and back by day was 272 miles, and by night 240 miles.

In July the longest distance flown out and back by day was 272 miles, and by night 300 miles.

In August the longest distance flown out and back by day was 330 miles, and by night 342 miles.

In September the longest distance flown out and back by day was 320 miles, and by night 320 miles.

In October the longest distance flown out and back by day was 320 miles, and by night 272 miles.

A large amount of photographic reconnaissance was done by individual machines at a great height. This work was nearly always successfully carried out, and only one photographic machine was lost during the whole period of operations.

Photographs have proved time and again the efficiency of the work of the bombing machines. Captured correspondence testified to the great moral effect of the bombing attacks on Germany.

It was apparent by the end of June that the enemy was increasing the number of fighting machines opposed to us. These machines were presumably being provided from Squadrons he had withdrawn from the Russian Front and re-equipped for Home Defence work. In September and October our day bombing squadrons had to fight practically from the front line to their objective, and from there home again. In several cases they had to fight the whole way out and the whole way back. This necessitated the most careful keeping of formation in order to avoid undue casualties, as once the formation was split up the enemy's machines could attack individual machines at their leisure. When our machines were in formation he generally concentrated on the

rear machines, occasionally making attacks on the machine in front.

I would like to state here that the courage and determination shown by the pilots and observers were magnificent. There were cases in which a squadron lost the greater part of its machines on a raid, but this in no wise damped the other squadrons' keenness to avenge their comrades, and to attack the same target again and at once.

It is to this trait in the character of the British pilots that I attribute their success in bombing Germany, as even when a squadron lost the greater part of its machines, the pilots, instead of taking it as a defeat for the Force, at once turned it into a victory by attacking the same targets again with the utmost determination. They were imbued with the feeling that whatever their casualties were, if they could help to shorten the war by one day and thus save many casualties to the Army on the ground they were only doing their duty. I never saw, even when our losses were heaviest, any wavering in their determination to get well into Germany.

Long-distance bombing work requires the utmost determination, as a change of wind completely upsets all calculations that may have been made before starting. It requires fine judgment on the leader's part to know if he perseveres to the objective, whether he will have sufficient fuel to carry the formation home again safely. This will be realised when it is pointed out that on several occasions the machines with only five and a quarter hours' petrol were out for that time; in one case a formation was out for five hours and thirty minutes and it only just managed to clear the front line trenches on its homeward journey. A miscalculation of five minutes would have lost the whole formation.

Ceiling was of more importance than speed for long-distance day bombing work. It was essential that squadrons should fly as high as possible, and it soon became apparent, as I had already stated, that the two squadrons with the 200 h.p. B.H.P. engines had not sufficient power for this long-distance work. One squadron was re-equipped with D.H. 9a machines with Liberty engines in November before the signing of the Armistice, and the second squadron had started re-equipping.

The 27th Group was established in England under the command of Colonel R. H. Mulock, D.S.O., for the purpose of bombing Berlin and other centres. This Group only received the machines capable of carrying out this work at the end of October, and though all ranks worked day and night in order to get the machines ready for the attack on Berlin they were only completed three days before the signing of the Armistice.

The Daily Communiqués gave all the places which were attacked, and therefore I have not repeated those reports in this despatch.

I would, however, like to bring to your notice the following important raids which show some of the difficulties met with in long-range bombing.

On the night of the 29th-30th June. Handley Page machines of No. 216 Squadron were ordered to attack the chemical works at Mannheim. Owing to the weather conditions only one machine reached the objective, on which it dropped its bombs. This machine, on the homeward journey, failed to pick up its aerodrome,

and landed no less than 160 miles S.W. of the aerodrome undamaged.

On the 5th July twelve machines of No. 55 Squadron, under the Command of Capt. F. Williams and Capt. D. R. G. Mackay, set out to attack the railway sidings at Coblenz. Shortly after starting the squadron passed over thick clouds and steered its course by compass, but the target was obscured by clouds. The leader turned with the intention of attacking Karthaus, but as he turned the anti-aircraft barrage over Coblenz opened. Through a small hole in the clouds he could see a portion of the target, and the formation followed him and released their bombs.

On the 31st July No. 99 Squadron, under the command of Capt. Taylor, went out to attack Mainz. They encountered forty hostile scouts south of Saarbrücken. Fierce fighting ensued, as a result of which four of our machines were shot down. The remaining five machines of the formation reached Saarbrücken, and dropped their bombs on the station. On their way home they were again attacked by large numbers of hostile scouts, and suffered the loss of three more of their number.

Immediately after their return No. 104 Squadron, led by Captain E. A. Mackay and Captain Home-Hay, proceeded to attack the factories and sidings at Saarbrücken, which they successfully accomplished with no losses.

On the 11th August No. 104 Squadron, under the command of Major Quinell, attacked the station at Karlsruhe, in spite of bad weather conditions, causing a heavy explosion in the station and scoring many direct hits on the railways sidings. In the course of fighting one of our machines was brought down and three of the enemy's machines were driven down out of control.

Frankfurt was attacked for the first time on August 12th by twelve machines of No. 55 Squadron, under the command of Captains B. J. Silly and D. R. G. Mackay. Most of the bombs burst in the town east of the goods station, and all the machines returned safely with the loss of one observer, who was killed by machine-gun fire.

The formation was heavily attacked by forty scouts of various types over Mannheim on its way to the objective and throughout the return journey. Two hostile machines were destroyed and three were driven down. The average time taken by each machine on this raid was five hours and thirty minutes, but all machines reached their objective and returned safely, though they only just cleared the trenches on their return journey, running completely out of petrol.

On the night of 21st-22nd August two Handley Page machines of No. 216 Squadron, piloted by Captain Halley and Lieut. Stronach, dropped just over a ton of bombs on Cologne station, causing a very large explosion. The time taken on this raid was seven hours.

On the 22nd August twelve machines of No. 104 Squadron started on a raid on Mannheim. The formations were led by Captain J. B. Home-Hay and Captain E. A. Mackay. Two machines had to land under control about five miles over the lines, after driving away eight hostile machines. Immediately before the objective was reached fifteen hostile machines attacked the formation with great determination and resistance. The formation came down to 6,000 feet in following the

leader, who was shot down under control. In the fierce fighting three German machines were destroyed. Despite constant and determined attacks by superior numbers, ten machines dropped bombs on Mannheim, causing seven bursts on a factory, where four fires were caused. A direct hit was also obtained on a large new building immediately south of the Badische Anilin Soda Fabrik Works.

On the night of the 25th-26th August two machines of No. 215 Squadron made their first attack on the Badische Anilin Soda Fabrik Works at Mannheim.

The two machines, piloted by Captain Lawson and Lieut. Purvis, left at eight o'clock. One pilot shut off his engine at 5,000 feet and glided in on the target from the N.W., following the river. He was at once picked up and held in the beams of the searchlights, and an intense anti-aircraft barrage was put up. The machine continually changed its course, but could not shake off the searchlights, and the pilot was completely blinded by the glare. At this moment the second machine glided in, with its engine almost stopped, underneath the first machine, got immediately over the works, below the tops of the factory chimneys, and released its bombs right into the works. The searchlights at once turned on to this machine, freeing the first machine from their glare. This machine then turned and made straight for the works as low as the second machine amongst the chimneys, and released its bombs. The searchlights were turned almost horizontally to the ground and the anti-aircraft guns were firing right across the works and factories almost horizontally. In spite of this, the two machines remained at a low altitude and swept the factories, works, guns and searchlights with machine-gun fire. On the return journey both of these machines passed through rain and thick clouds, whilst lightning and thunder were prevalent throughout the trip.

On the night of the 2nd-3rd September machines of No. 215 Squadron attacked Buhl aerodrome and the railway junction at Ehrang, some of the machines making two trips. In the first attack on Buhl two direct hits were obtained and three fires started, all bursts being observed on and in close proximity to the hangars. The second attack was carried out from 150 to 900 feet, machines circling around the aerodrome for fifteen minutes. Excellent shooting was made and thirteen direct hits were claimed. Three hangars were entirely demolished and a fire started. In addition motor lorries were bombed from 100 feet, and a hostile machine on the ground was attacked with good results.

On the 7th September eleven machines of No. 99 Squadron, followed by ten machines of No. 104 Squadron, made an almost simultaneous attack on Mannheim, where bombs were dropped with excellent results on the Badische Anilin and Soda Fabrik.

No. 99 Squadron obtained at least eight direct hits on the factory, but the results of No. 104 Squadron could not be observed owing to the mist and smoke. Both squadrons were attacked on the outward and return journey and over the objective by superior numbers of hostile aircraft. The formation of No. 99 Squadron were led by Colonel (then Major) L. A. Pattinson, and the formation of No. 104 Squadron by Captain R. J. Gammon.

No. 99 Squadron was attacked by six hostile machines fifteen miles over the lines. These were driven off. Ten hostile machines attacked about fifteen miles over the lines. They were also driven off. Fifteen hostile machines then attacked over the objective. After dropping bombs the formation turned towards the hostile machines, which apparently disconcerted them, as they became scattered. On the return journey several enemy scouts kept up a running fight, one scout attacking from in front was driven off by the leader's observer firing over the top plane.

No. 104 Squadron was attacked at a long range fifteen miles over the lines. The enemy were driven off. Fifteen hostile machines heavily attacked over the objective and followed the formation back for seventy miles. Near the lines the formation was again attacked by seven hostile machines.

Over two tons of bombs were dropped at Mannheim in this raid.

On the night of the 16th-17th September seven Handley Page machines were missing. Five of these, detailed for Cologne and Mannheim, were probably unable to return in the face of a strong south-westerly wind, which increased after the machines had left the ground.

The missing machines undoubtedly attacked various objectives well into Germany before they had to land. It was reported that one machine landed in Holland with engine trouble, after having dropped its bombs on Bonn, and was interned.

On the 25th September No. 110 Squadron, led by Captains A. Lindley and A. C. M. Groom, dropped over 1½ tons of bombs on Frankfurt. They were opposed by a large number of hostile machines, two of which they destroyed. Four of our machines did not return, and, in addition, one observer was killed and one observer and one pilot were wounded. This was the first long-distance raid carried out by this squadron.

On the night of the 21st-22nd October machines of Nos. 97 and 100 Squadrons attacked the railways at Kaiserslautern in very bad weather. Several 1,650 lb. bombs were dropped, but bad visibility obscured the results.

One very large fire and five smaller ones were observed, and all these fires were seen to be still burning when the town was lost sight of in the mist.

I would like to bring to your notice the work of bombing aerodromes done by No. 100 Squadron, commanded by Major C. G. Burge, when it was equipped with the short-distance F.E. 2b machines, and also with Handley-Pages. The squadron bombed aerodromes from low heights, and photographs show that a large number of sheds were hit.

The Independent Force, at the request of Marshal Foch, co-operated with the American First Army in its attack on the St. Mihiel salient, and it further co-operated with the Army by attacking important railway junctions behind the French lines in the combined offensive of the 26th September.

My thanks are due to Brigadier-General B. B. Gordon, D.S.O., my Chief of Staff, who carried out his responsible duties with the most commendable smoothness and efficiency.

I also desire to thank Colonel G. R. M. Church, C.M.G., my Army Troops Commander, for the admirable manner in which he carried out his very responsible duties.

Finally, I desire to express my great appreciation of the loyal work of all my own Staff, of the Commanders of Formations and their Staffs, and all the Units in the Independent Air Force serving under me, who carried out their difficult task of organising and carrying through with tact and energy the work of forming a new Air Force during active hostilities.

I have forwarded the names of officers and other ranks deserving of special mention in a separate despatch.

I have the honour to be,

My Lord,

Your Obedient Servant,

(Sd.) H. TRENCHARD,  
Major-General,

Commanding Independent Force,  
Royal Air Force.

The Rt. Hon.

The Lord Weir of Eastwood,  
Secretary of State for Air,  
Air Ministry,  
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