



Some Lessons of the Air Exercises 1930

By a 'Blue Force' Staff Officer

This article does not pretend to be a complete summing up of the lessons of the Air Exercises from a Directing Staff point of view. It is a brief summary from the point of view of a Blue Force Staff Officer, but I hope it will be found reasonably impartial in tone.

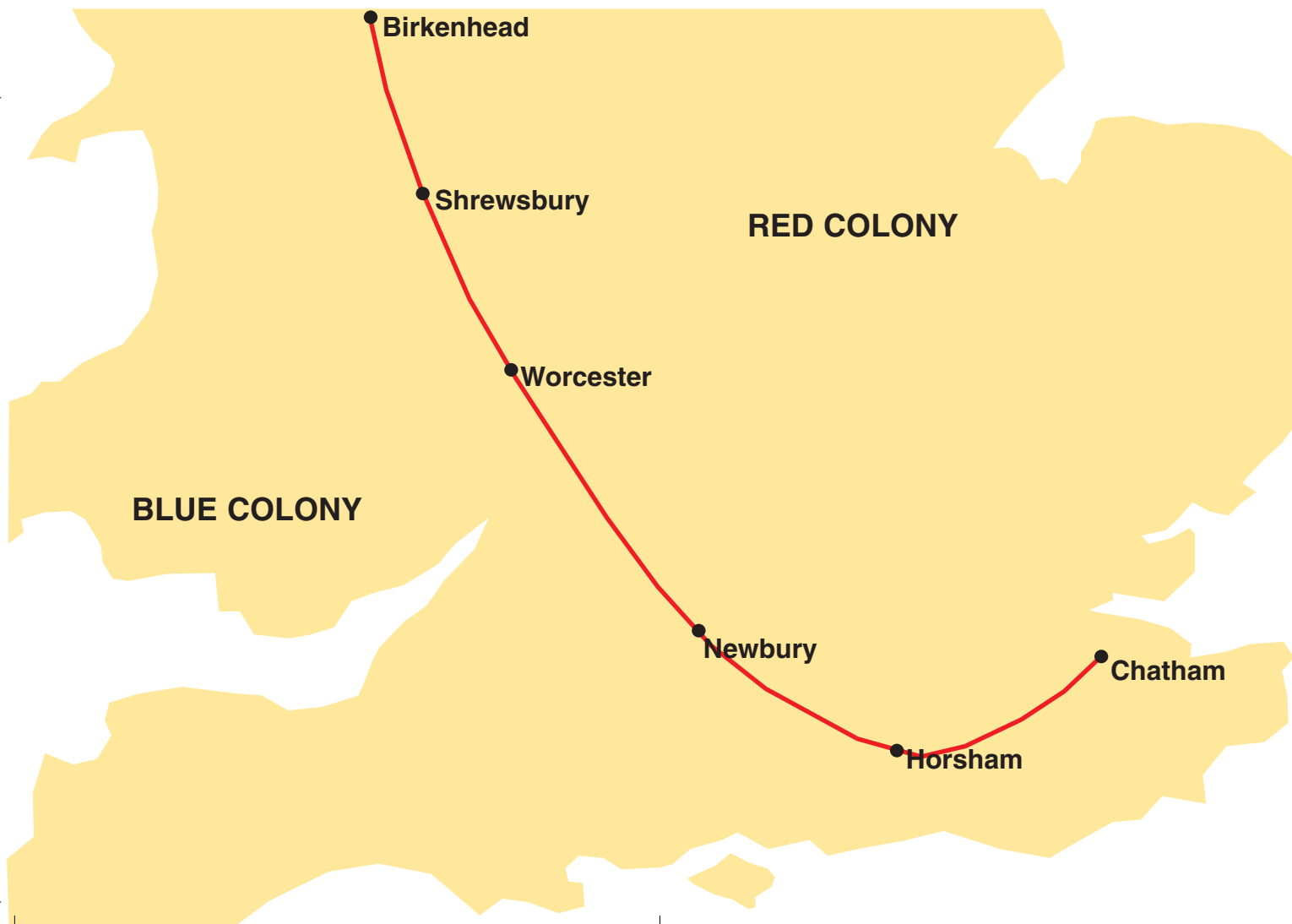
Most people, when the Air Exercises are mentioned, ask at once who won, as though it were a horse race or a cricket match. Most newspapers published a daily account of air casualties, which certainly, if taken as the only criterion, would have awarded the victory to Red Colony. But the intention of the Blue Commander was not the destruction of the Red forces, and such a comparison is misleading.

My aim is to discuss the exercises with a view to finding out what lessons can be learned from them, and I must emphasise that the views and conclusions set forth are purely my own personal ones.

I have not attempted to deal with the tactical lessons of the exercises, as they are numerous, complicated, and very much bound up with local circumstances.

IMPORTANCE OF THE EXERCISE

The Air Exercises of 1930 were of unusual interest for several reasons, but principally because, for the first time in the history of the Royal Air Force, the 2 opposing commanders were given complete liberty of action. Each commander was allowed to appreciate the situation and to form his own plan. The Directing Staff only interfered with the conduct of the operations to a very minor extent in order to ensure that the 1st AA Searchlight Battalion RE, obtained a reasonable chance of using their searchlights against night bombers. All previous exercises on a large scale have been to test the defence, and particularly its intelligence and administrative systems, and the offence has been made to work to a pre-arranged timetable.



GENERAL IDEA OF THE EXERCISE

For the benefit of those who are not familiar with the scheme I will briefly explain the general idea.

A glance at the accompanying map will show that this island is divided into 2 colonies by a curved frontier running from just west of Birkenhead, through Shrewsbury, Worcester, Lechlade, Newbury, Basingstoke, Horsham, Chatham. The northern part is Red Colony, and the southern, Blue Colony.

Redland and Blueland are on the brink of war, and Red Colony is of great importance to Redland owing to its mineral resources. In the neighbourhood of Hucknall and Bircham Newton are copper mines, with power stations, electric furnaces, and all the apparatus necessary to produce metallic copper. This copper is then sent by single line railway via Cranwell, Catfoss and Skipsea to Catterick, which is a ship-canal port. The export of metallic copper is about 1,000 tons a day.

Blue Colony has no towns or industries of importance, and is merely the base for Blueland's air forces from which they are enabled to threaten the copper resources of Redland. The frontier has several great mountain ranges along it, over which aircraft cannot fly, and there are passes known as Sealand, Gloucester, Reading, Chelmsford and Norwich.

The whole island is rocky and fairly barren, and no landing facilities exist other than the aerodromes shown on the map. The inhabitants are in a low state of civilisation, and in Red Colony, at any rate, are unreliable in temper and likely to cause trouble in the event of war. The copper mines and furnaces are largely operated by native labour.

BLUE FORCES

Blueland has built up a powerful striking force in Blue Colony, consisting of the following units:

(Virginia) No 7 (Night Bomber) Squadron, Worthy Down
 (Virginia) No 58 (Night Bomber) Squadron, Worthy Down
 (Virginia) No 9 (Night Bomber) Squadron, Manston
 (Fox) No 12 (Day Bomber) Squadron, Andover
 (Hart) No 33 (Day Bomber) Squadron, Tangmere
 (Sidestrand) No 101 (Day Bomber) Squadron, Andover
 (Wapiti) No 600 (Day Bomber) Squadron, Tangmere
 (Wapiti) No 601 (Day Bomber) Squadron, Lympne
 (Wapiti) No 605 (Day Bomber) Squadron, Manston
 (Siskin) No 1 (Fighter) Squadron, Upavon
 (Siskin) No 25 (Fighter) Squadron, Upavon
 (Siskin) No 43 (Fighter) Squadron, Upavon
 Aircraft Depot (imaginary), Tangmere

One cannot fail to be struck by the very unfavourable strategic disposition of the Blue capital and aerodromes, and particularly of the Blue aircraft depot at Tangmere. Geographical considerations may have dictated the situations of the aerodromes, but it is hard to believe that a better site for the depot could not have been chosen. The Blue Commander can hardly have been satisfied with its location, but no doubt considerations of economy, and possibly the apathy of the Blueland Government, caused its removal to a more suitable position to be postponed until too late.



Armstrong Whitworth Siskins

Vickers Virginia



There are no searchlights or AA guns in Blue Colony, but the aerodromes are defended by well-trained machine gunners.

RED FORCES

The Red Forces have been organised with a view to the defence of their industrial areas and communications, and consist of eight Fighter Squadrons, three Day Bomber Squadrons, and two Night Bomber Squadrons, equipped and disposed as under:

(Hinairi) No 99 (Night Bomber) Squadron, Waddington, operating from forward aerodromes after dark
 (Hyderabad) No 10 (Night Bomber) Squadron, North Coates Fitties, operating from forward aerodromes after dark
 (Fairey III F) No 35 (Day Bomber) Squadron, Upper Heyford
 (Horsley) No 100 (Day Bomber) Squadron, Bicester
 (Fairey III F) No 207 (Day Bomber) Squadron, Duxford
 (Bulldog) No 3 (Fighter) Squadron, Hornchurch
 (Bulldog) No 17 (Fighter) Squadron, Hornchurch
 (Siskin) No 19 (Fighter) Squadron, Bircham Newton
 (Gamecock) No 23 (Fighter) Squadron, Kenley
 (Siskin) No 32 (Fighter) Squadron, Kenley
 (Siskin) No 41 (Fighter) Squadron, Northolt
 (Siskin) No 29 (Fighter) Squadron, Cranwell
 (Siskin) No 111 (Fighter) Squadron, Cranwell
 Aircraft Depot (imaginary), Catfoss

No 1 AA Searchlight Battalion RE, had its searchlights so disposed as to light an area to the south of Cranwell.

There were no effective telephones in Blue Colony and very few in Red Colony, and all point-to-point communication had to be by W/T. This meant extensive use of cyphers, though, in reality, the Red

Colony signal system was so congested that Blue Colony might have made fairly free use of signals in clear.

COMMENCEMENT OF THE EXERCISES

The exercise began at 2359 hours on Friday, August 8th, and from that moment no communication was permitted across the frontier. The early stages of war were not devoid of humour, as opposing squadrons were considerably mixed up. A Red fighter squadron No 111, was at Andover, having just completed a period of affiliation with No 101 (Bomber) Squadron. The presence of these enemy officers in Blue Force HQ mess made the preservation of secrecy a matter of some difficulty. They were to move under sealed orders on the Saturday, but foggy weather delayed their departure until about 1400 hours on the Sunday. As three Blue squadrons on the move were expected to pass through Andover about Sunday, midday, and it was highly undesirable to let the enemy know of this, steps had to be taken to hold them up on the road, if necessary, till the enemy had departed.

Similarly, No 33 (Bomber) Squadron was at Upvon, affiliating with a fighter squadron, when the exercise commenced. The bomber squadron and the two Red fighter squadrons, who had to leave Upvon, as it became a Blue station, had much ado to keep each other in ignorance of their destinations. At the time of the outbreak of war at 1100 hours on Tuesday, August 12th, each side had no positive information of the war plan and disposition of the enemy.

THE BLUE WAR PLAN

The aim of the Blue Force Commander was obvious and simple. It was to stop the export of copper from Red Colony. To do this he could attack the industrial areas themselves, the railway, and Catterick, the port of shipment. A ship-canal port, with its lock-gates and restricted channel of communication from the sea, seemed to offer a favourable target to air attack. It was, unfortunately, out of reach of Blue day bombers.

The Blue Force Commander possessed the great advantage that his objectives were fixed, and not very amenable to concealment from the air. The chief disadvantage from which Blue Colony suffered was the difficulty of obtaining security. The aerodromes and centres were scattered at some distance from each other, and all fairly close to the frontier and to the enemy's forward aerodromes. The three fighter squadrons possessed by Blue Colony were quite inadequate to secure the defence of the Blue aerodromes and depot. The Blue depot was only 19 miles from the frontier, and only 44 miles from Kenley, the nearest Red aerodrome. Nothing but the most inexcusable negligence or stupidity could have been responsible for such a site being selected for the aircraft depot. The defence of the depot was practically impossible, and this being so, the Blue Commander was forced to rely on obtaining a quick decision. He had to attain his aim before the loss of his depot could affect his striking power.

The Blue war plan, briefly, for the first day and night of war was as follows:

- a. Reconnaissance by single fast day bombers of all enemy aerodromes
- b. A daylight attack by 12 night bomber aircraft from Worthy Down on Catterick via the Sealand Pass and Preston
- c. Sustained attacks by day bombers on Hucknall, Cranwell, and Bircham Newton

- d. Continuous offensive patrol during daylight hours in squadron strength by fighters on the line Andover–Worthy Down
- e. Sustained attacks by night bombers on Hucknall, Cranwell and Bircham Newton.

It was considered that Red Colony would probably regard Blue night bombers as his first objective, as he might suppose them to be in their hangars, so No 9 (Bomber) Squadron was moved temporarily, with aircraft crews only, from Manston to Andover and concealed in the hangars. No 9 (Bomber) Squadron, as a consequence, escaped a series of very heavy attacks made on Manston during the first day and night.



Hawker Horsley

THE RED WAR PLAN

The aim of the Red Commander was also obvious and simple. It was to secure the export of copper to Redland. To effect this he had to destroy the Blue air forces before they could effect their aim.

The Red Commander had a choice of two broad policies, which we may call the 'forward' and the 'backward' policies. He might move most of his units to his forward aerodromes and attack the Blue aerodromes with both fighters and bombers, or he might concentrate his fighters near his vital points, and, relying on a sound intelligence system, attempt to intercept the Blue forces in the air. The 'forward' policy is mainly offensive, the 'backward' one mainly defensive. He adopted the 'forward' and offensive policy, and this decision was amply justified by results.

The Red war plan was to allot three fighter squadrons to the defence of Cranwell and Bircham Newton, and, with the exception of a number of day bombers engaged on reconnaissance duties, to employ the

rest of his force, from forward aerodromes, to attack with bombs and machine-gun fire the Blue air forces wherever they could be found.

This policy took advantage of the weak point in Blue Colony's armour – the unfavourable strategic disposition of his aerodromes and depot.

Thus the Red Commander, though his task was a strategic defensive, succeeded in employing the bulk of his forces in a very active offensive role.

Westland Wapitis



THE WAR

It is not necessary to go into the details of raid and counter-raid, nor to follow the operations step by step. It is sufficient for our purpose to note that the raid on Catterick was successful, and that by the second day practically all work had stopped in the industrial areas. By the end of the third night all hope of exporting metallic copper to Redland for several months had passed away. The Red capital had ceased to exist as a capital, the population was in open rebellion, and the High Commissioner had been forced to remove himself to a neighbouring village. The Blue Commander had attained his aim, but at the cost of his Air Force. When day dawned on August 15th, Blue Colony had only 13 day bombers, 6 night bombers, and 12 fighters left serviceable, while the Blue depot at Tangmere was obliterated. Blue Colony had gained her object, but had destroyed herself in the process.

Red Colony had not attained her aim, her copper industry lay in ruins, and her port was out of action, but she still had 20 day bombers, 12 night bombers and 40 fighters serviceable, and her depot was

intact. She could therefore have revenged herself by making Blue Colony capitulate, but only time could rebuild her industries and her port. Her failure to supply Redland with copper might have had so serious an effect on the main theatre of war between Redland and Blue land as to contribute largely towards an adverse decision.

As Blue Colony was of no value save as a base from which to attack the Red Colony industries, it is arguable that, as the Blue Commander had attained his aim, the loss of his Air Force was not a very serious matter, and the results achieved were well worth the cost.

So much for the results of this interesting colonial campaign. Now let us consider what we may learn from the operations.



Gloster Gamecock

LESSONS: SECURITY

The first obvious point that springs to mind is that the Blue Force Commander apparently neglected to bear in mind the sixth principle of war – security.

On the face of it, there may appear to be some truth in this contention, but the Blue Commander was placed in a very unfavourable position. The temptation to divert a large portion of his striking force from its task of fulfilling the aim, to the destruction of the enemy air force, was severe. It may be that, owing

to some extent to its dangerous attractiveness, the idea was sternly rejected, and the Blue squadrons kept on their true task of destroying the copper industry. The impossibility of defending the Blue aircraft depot may have influenced the Blue Commander to rely on obtaining a quick decision by bombing the vital centres with maximum intensity.

But Mahan has said: 'Bases are the indispensable foundation upon which the superstructure of the offensive is raised'. This is very true, and it is also true to add that the bases must be secure ones, or the foundation will not bear the weight of the superstructure.

Blue Colony's offensive would have practically collapsed on the fourth day of the war, because her bases were not secure.

We may ask ourselves if it was possible for Blue Colony by any means to attain her aim and yet to avoid this fate. It may be argued that Blue Colony should have destroyed the Red Air Force as a necessary preliminary to turning her attention to the Red industries. An army would certainly have to defeat the opposing army before it could proceed to control the enemy industries. But this is a dangerous doctrine for an Air Force Commander to adopt. It is very difficult to obtain a decisive defeat of an enemy air force. The article on 'Air Strategy', by Wing Commander A G R Garrod, in the Quarterly of last January, puts the case admirably in the last paragraph under the heading of 'The Air Objective'. He points out that an Air Force Commander cannot afford to wait for a decisive victory over the armed forces of the enemy before proceeding to his ultimate aim in war. I cannot do better than quote from his concluding sentences:

'If he were to wait, he might do so until the war was over, only to find that his own people had forced the government to sue for peace. At the same time, the air strategist will have to exercise the soundest judgement throughout the air operations to ensure that his squadrons are not unduly interfered with by the enemy, and if an opportunity presents itself for the quick destruction of enemy air forces he will have to seize it as a temporary and profitable diversion from his main purpose'.

The last sentence is the key to the problem.

On the third night of the war the Blue Commander, feeling that his aim was well-nigh attained, sent most of his night bombers against the enemy aerodromes, with the result that 29 enemy aircraft were destroyed, and 44 damaged, with the loss of four Blue night bombers. At the same time, 8,504 lb of bombs were dropped on Cranwell, completing the panic already in existence, and in the words of the umpires, 'the morale of the inhabitants was so shaken that they demanded peace at any cost'.

This was a most successful night's work, and it is probable that Blue Colony might with advantage have employed from the beginning a fair proportion of her night bombers against enemy aerodromes. We must remember, however, that for safety reasons all aerodromes during the exercises were lit by flares and were therefore quite easy to locate and bomb. Possibly, in real war, the enemy aerodromes would be much more difficult to find, though it is probable that in a barren country the aerodromes would be sited near rivers and roads which might make them fairly easy to locate. The lighting-up of all aerodromes also made it easier for the Red night bombers to destroy the Blue Air Forces, and it may have over-emphasised the effectiveness of night bombers in attacking aerodromes. It was one of the unavoidable unrealities of the exercises.

The great bomb-carrying capacity of night bombers makes it possible to employ them in diversions of this sort and yet keep up a fairly continuous bombardment of the principal objectives. It is also an advantage to employ them against objectives undefended by searchlights, as they are then almost immune from attack. In addition, as soon as it was clear that the Red Commander had adopted a

'forward' policy, the Blue fighters might have been used offensively against his forward aerodromes. The difficulty here was the uncertainty of finding the enemy on the ground during daylight hours. Three low-flying fighter attacks at dusk and dawn were made on Bicester and Upper Heyford with good results, but it is doubtful if the blue fighters would have achieved more by such attacks than they did by means of their offensive patrols.

My conclusion is that, if security cannot be obtained by strategic disposition, a commander must achieve it by diverting a proportion of his striking force from the prosecution of his aim.

THE EMPLOYMENT OF FIGHTERS

The exercises brought out very clearly the difficulties inherent in the interception of bombers by fighters. The three Red fighter squadrons detailed for the defence of Cranwell and Bircham Newton made so few interceptions as to be almost negligible. They were kept on the ground standing by and were sent up on receipt of raid warnings.

These raid warnings were sent by forward ground observation posts which proved very ineffective, and by bomber aircraft which flew about over Blue aerodromes and sent W/T information of the take-off of a raid. These reconnaissance aircraft then shadowed the raid until their destination was certain, and sent information to Red Headquarters by W/T. It is extremely doubtful if it is possible for reconnaissance aircraft to sit over enemy aerodromes in real war, and in the exercises the policy proved expensive.

In any case it was not very effective in securing interceptions, but it worked well in informing the forward Red fighter squadrons when Blue squadrons were returning from raids. The regularity with which Blue squadrons were attacked by fighters as soon as they had landed was remarkable. The failure of the Red fighter squadrons to intercept, combined with the shortness of the nights and bad weather during the hours of darkness, made it profitable for Blue Force to use night bombers for daylight raids.

As the Red Commander used most of his fighter squadrons to attack Blue aerodromes with bombs and machine guns, we may ask ourselves whether better results would not have been achieved if they had been bomber squadrons instead of fighters. We must remember that a commander will seldom find the enemy aerodromes within fighter range. The war plan of Red Colony seems to reaffirm the soundness of the home defence organisation, that is to say, two-thirds of the force should be bombers and one-third fighters. The Red Commander, when given a large number of fighter squadrons, immediately used two-thirds of his fighters as bombers.

Blue Colony, on the other hand, when appreciating the situation, felt very weak in fighters. This weakness led the Blue Commander to concentrate his fighters at Upavon, and, because of the nearness of his aerodromes to the frontier and the lack of any raid-warning system, to employ them on continuous offensive patrols. This imposed a heavy strain on the squadrons, but the results were satisfactory. Over fifty interceptions were made, the majority in superior force. The line defended (Andover – Worthy Down) was admittedly a very restricted one, but any extension of it would have at once reduced the number of interceptions. The lesson seems to be that fighters can effectively defend a vital point of limited size unless the enemy is able to concentrate against them.

It is clear that, in these exercises, the Blue Air Force was very much more vulnerable on the ground than in the air, and this is likely to be true in terrain which has a limited number of suitable aerodromes. When the ground offers many suitable landing places, an air force, with some loss of efficiency, can move from place to place, and may be almost as difficult to intercept on the ground as in the air.



Bristol Bulldogs

In the exercise, the Blue squadrons used various aerodromes for refuelling, and the Red Commander was far from certain of the location of some units, even on the third day. Manston, for example, was several times heavily attacked when practically no aircraft were on the ground.

My conclusion is that the only correct role of single-seater fighters is the defence of a restricted area, and that unless very rapid and accurate raid warnings can be organised, the system of continuous offensive patrol, though uneconomical, must be adopted. Such a system, at least, will compel the enemy to concentrate in order to avoid being intercepted by superior forces, and thus will prevent his achieving continuity in attack.

THE CONTROL OF BOMBING AIRCRAFT

A commander who is operating day and night bombers must have an air staff capable of working at full pressure 24 hours a day. There is no doubt, therefore, that the peace establishment of such an Air Force Headquarters must be greatly expanded to meet the demands of war. It is not clear from what source these additional staff officers will be procured. Large staffs are, quite rightly, so unpopular in peace that I feel that there is more than a possibility that it will be found, in war, that the staffs are inadequate.

Some unit officers are not inclined to regard an overworked staff with very sympathetic eyes. They should, however, realise that an over-worked staff means muddled orders, inadequate administrative arrangements, late arrival of operation orders, and lack of personal contact between staff and unit officers. It may mean that the staff are so immersed in unavoidable routine that no one has time to study the situation, to make plans, and to make the best use of the intelligence available. It leads to paralysis of the higher functions of command, and, possibly, to defeat.

COMMUNICATIONS

The communications in these exercises, as mentioned above, were entirely by W/T. A vast amount of traffic was caused by umpire messages, such as departure signals, raid and combat reports. On the other hand, in these exercises there was no 'E' and 'P' Staff traffic which would assume large dimensions in a real war. Therefore, if we accept the Press and umpire traffic as representing the 'E' and 'P' Staff traffic we shall probably not be far wrong.

In war it will be an advantage to use separate operational and administrative wavelengths, and it will probably be found possible to send some operational and much administrative traffic in a simpler, or, at any rate, a more quickly operated cypher.

Every effort was made by Blue Force to reduce the number and bulk of operational signals. In this they were more successful than Red Force, whose signal system appears to have become very seriously congested. The method adopted by Blue Force was to issue to each type of wing, day bomber, night bomber and fighter, a set of Standing War Instructions. These were not bulky, and covered all reasonable points.

The delay caused by cyphering even short messages about doubles the time of transmission, and it is a matter for consideration whether cyphering is necessary in many cases. The use of low power transmission makes interception a matter of some difficulty, while short-wave working decreases the accuracy of directional wireless position finding. Rapidity of communication is a very great asset to a commander, and the rival claims of secrecy and rapidity must be considered with due regard to the actual circumstances.

My conclusion is that everything possible should be done to reduce and simplify the signal traffic and that cyphering should only be employed when absolutely necessary.



Hawker Horsley

INTELLIGENCE

We have seen that the Air Force Commander must be prepared, in the interests of his own security, to seize an opportunity for the quick destruction of enemy air forces. It is also clear that, when he thinks he has attained his aim, he must make a new appreciation of the situation. To enable him to do these things, he requires the best possible intelligence system. Speed and reliability are the essentials of air intelligence, for the great hitting power and mobility of aircraft are wasted if the commander does not know when and where to strike.

Armstrong Whitworth Siskin



In these exercises, the Blue Commander had little or no information, at the time, about the effect of his air attacks. Had he known then what the umpire narrative has revealed since the exercises he would no doubt have appreciated the situation anew on the second or third day and decided that his new aim was to destroy the enemy forces, while bombing the industrial areas and the capital sufficiently to stop any attempt at repair and reconstruction.

No doubt, in war, a commander will have great difficulty in discovering in time the effect of his bombing, but the bombing will at least be real and the squadrons will be able to say what damage they think they did, while subsequent raids should be able to form some estimate of the effects of previous bombing. Air photography will also assist a commander to assess the damage.

It would not have been difficult for the Blue Commander to have arranged a system of intelligence in Red Colony, for the frontier was almost undefended. It is not too much to say that the whole existence of Blue Colony might have depended upon the soundness of its intelligence system. The importance of good intelligence to the defence is generally realised, but I feel that, in peace, we are apt to forget how much the offence depends upon intelligence, and to imagine that a sound intelligence system will be improvised somehow or other on the outbreak of war.

CONCLUSION

This survey of the lessons of the Air Exercises does not claim to be exhaustive, although an attempt has been made to sum up the results of the campaign. They are merely the thoughts and reflections of an Air Staff Officer who necessarily saw the war from an individual angle. I hope, however, that others may be stimulated to the study of these problems, if only as a result of the violent state of disagreement with my conclusions in which they may find themselves.

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