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R.A.F. NARRATIVE

(First Draft)

THE CAMPAIGNS IN THE FAR EAST

VOLUME III

INDIA COMMAND

SEPTEMBER 1939 TO NOVEMBER 1943

AIR HISTORICAL BRANCH (1)

AIR MINISTRY.

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NOTE. Maps 1 to 6 have been grouped at the end of the Appendices.

EXPLANATION OF ABBREVIATIONS

In this narrative the use of abbreviations has been avoided as far as possible. Inevitably a number have found their way into the following pages, particularly in the appendices, and in order to obviate any possible doubt as to their meaning the following explanation is provided.

ABCFC.	- Assam-Burma-China Ferry Command (USAAF)
A.C.	- Army Co-operation
ACSEA.	- Air Command, South East Asia
AHQ(B)	- Air Headquarters, Bengal
AHQ(I)	- Air Headquarters, India
A.I.	- Air Interception (i.e. airborne night radar equipment)
A.L.G.	- Advanced landing ~~groups~~ ground
A.L.S.	- Air Landing School
A.M.	- Air Ministry
A.S.V.	- Radar equipment for the detection of surface vessels.
A.V.G.	- American Volunteer Group
C.A.S.	- Chief of the Air Staff
C.A.T.F.	- China Air Task Force
C-B-I.	- China-Burma-India
C.O.S.	- Chiefs of Staff
D of Ops.	- Directorate of Operations, Air Ministry
F.B.	- Flying Boat
F.R.	- Fighter reconnaissance
Ftr.	- Fighter
G.C.I.	- Ground Controlled Interception (Radar)
G.H.Q.	- General Headquarters
G.R.	- General reconnaissance
G.R.F.B.	- General reconnaissance flying boat
H.B.	- Heavy bomber
H.F.	- High frequency
I.A.F.	- Indian Air Force
I.A.T.F.	- Indian Air Task Force (USAAF)
J.A.F.	- Japanese air force
J.P.S.	- Joint Planning Staff
L.B.	- Light bomber
L.R.G.R.	- Long range general reconnaissance
L.R.P.G.	- Long Range Penetration Group
M.B.	- Medium bomber
M.R.G.R.	- Medium range general reconnaissance
M.T.	- Mechanical transport
N.F.	- Night fighter
P.R.	- Photographic reconnaissance
P.R.U.	- Photographic Reconnaissance Unit
R.I.A.F.	- Royal Indian Air Force
S.A.S.O.	- Senior Air Staff Officer
SEATIC.	- South East Asia Translation and Interrogation Centre
SEF.	- Single-engined fighter
Spec.Dty.	- Special Duty (Clandestine work)
Tac/R.	- Tactical reconnaissance
T.B.	- Torpedo bomber
TEF.	- Twin-engined fighter
Tpt.	- Transport
USAAF.	- United States Army Air Force(s)
V.H.F.	- Very high frequency.

SECTION I

PROLOGUE

SEPTEMBER 1939 TO MARCH 1942

The Defence Organisation

When in March 1942 the Japanese began their advance into western and northern Burma, it seemed that their plan of conquest might include India, and India's defences at that time were in no condition to repel an attack by a major power. From 1939 until the outbreak of war with Japan on 7 December, 1941, many factors, both strategic and indigenous, affected the development of the Air Forces in India and in order to appreciate the situation in the Spring of 1942 when India lay wide open to attack, it is necessary to review the events of the previous years.

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D. of Ops.
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2. During the years immediately before the commencement of hostilities in Europe and up to the middle of 1940, the expansion and modernisation of the Air Forces in India was greatly hampered by the constitutional arrangements then in force. Defence was a reserved subject under the Vicerdy who was advised on defence matters by the Commander-in-Chief, an Army general. The Commander-in-Chief was, in fact, the Viceroy's Defence Minister and in that capacity controlled the Royal Indian Navy, the Indian Air Force and the Royal Air Force in India.

3. All Military finance was dealt with by a Principal Staff Officers' Committee of which the Air Officer Commanding was a member, the remainder of the Committee consisting almost entirely of Army officers. In this Committee the competing claims of the services were judged and allocations of available funds made. All the money for the armed forces in India was provided from the Indian budget except for a grant of £1,250,000 a year made by the Imperial Government towards the cost of maintaining British troops stationed in India.

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D. of Ops.
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4. A very large Army had to be supported and in consequence monetary appropriations for defence purposes represented a high proportion of the total revenues of the country. In addition there was, not unnaturally, a strong and continuous pressure, which constitutional changes did nothing to relieve, to reduce the defence budget. At the same time the Command Commander-in-Chief was anxious to spend every possible rupee on the mechanisation and modernisation of the Army in India. In these circumstances it is hardly surprising that money for the Air Forces was difficult to obtain, and without money there could be no modernisation of the air arm.

Ibid

5. Since the role of the Air Forces in India was one of close co-operation with Army columns there was nothing to gain, under the existing defence arrangements, by re-equipping the R.A.F. with modern aircraft. But the Air Ministry wished to regard India as an integral part of Imperial defence and if this policy was to be realised it was essential that the R.A.F. in India be brought up to a pitch of efficiency equal to that of other overseas commands. The only way to achieve this was to use a modernised air force to supplant Army formations in the control of tribes on the North West Frontier.

P.Guedalla
"Middle
East"

6. A conference held in Cairo in 1921 under the Colonial Secretary (Mr. Churchill) had decided that British interests in Iraq should be safeguarded by R.A.F. squadrons. The

decision was essentially a practical one as an army garrison would have cost a good deal more. Similar considerations subsequently resulted in the transfer of Aden to R.A.F. custody. This policy was "Amazingly successful and it was certainly economical". In 1930 Lord Trenchard advocated that the R.A.F. should take over the control of the North West Frontier of India but this battle was never won.

Memoirs of Sir James Grigg

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7. Perhaps the principal reason for the tactical subordination of the R.A.F. in India may be ascribed to the fear that if it was once conclusively shown that Frontier troubles could be dealt with effectively by air power, public opinion in India would demand a considerable reduction in the land forces maintained in India, which would no longer be used in Frontier operations on a scale to which they had become accustomed. Whether the R.A.F. could have achieved the same success on India's North West Frontier as they had in Iraq and Aden remains debatable as they never had the chance.

IIJ51/15/10 India Office Telegrams

8. Throughout the years following Trenchard's "Substitution Plan" of 1930, the Air Council continued to press for changes in the defence machinery in India and for the Air Forces to be given equal status with the General Staff. But no success marked their efforts. Insensibly, however, the R.A.F. was getting into a very favourable position since such air operations as had been carried out on the Frontier during 1938-39 had been highly successful. It seemed likely that as time went by the policy of sending out Army columns on punitive expeditions would give way to a greater exploitation of air power. The real economy thus effected could conceivably have impressed itself on soldiers and politicians alike. But before this could happen, war broke out in Europe and Air Forces, instead of being obstructed by the constitutional set-up, found that their progress was blocked by the strategic situation which demanded the concentration of all available resources in the active theatres of war. And so operations on the North West Frontier continued as they had done for decades past and the handful of Audax and Wapiti aircraft which comprised the Air Forces in India were condemned to tribal operations in close co-operation with Indian columns.

9. Thus until 1939 the Air Forces in India had, perforce, to remain outside the scheme of Imperial defence since the squadrons located there were unfit to wage war against a major power. Moreover, financial considerations forbade the modernisation of the force and the Air Ministry, owing to constitutional anomalies, was powerless to intervene.

The Threat To India

IIJ50/47/19 "Expansion of the Air Forces in India"

10. Great Britain had always regarded Russia as the most probable major enemy of India and when in September 1939 the Russians annexed part of Poland, the possibility of an attack upon India through Afghanistan again arose. With this threat looming ahead, the Government of India began to take a more realistic attitude towards air power and they decided that an effort should be made to bring India's antiquated forces up to a modern pitch of efficiency. Modern equipment was not forthcoming from the West, however, and India was forced to do what she could with indigenous resources. But her industrial capacity was not geared to meet the requirements of a modern air force and progress in the equipment sphere was practically nil. Moreover, although the British Chiefs of Staff appreciated the threat from Russia, India herself did not regard it quite so seriously and was inclined to regard the mountain barrier on the North West Frontier as a bastion which could be easily defended.

11. The deterioration of our relations with Russia in January 1941 and the improvement of those with Japan further aggravated the threat from the North West and what development went on was largely confined to that area. The urgency for completing defence measures fell away in the following June when the German invasion of Russia brought the U.S.S.R. into the war on the side of the Allies. India snug behind her mountain barriers felt secure but her complacency was rudely shattered when in March 1942, Rangoon fell and the Japanese began their advance towards India's eastern frontier.

Planning

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12. Up to the autumn of 1940 a number of self contained plans were prepared by each of the services to meet what they thought to be their own particular problems. This amorphous planning subsequently gave way to a joint plan devised to cover the defence of India from all probable threats. In order to ensure co-ordination between the three services a Joint Planning Committee was formed, for the first time as far as is known, and a plan for 1941 was drafted.

IIJ/51/20
D. of Ops.
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13. For the Air Forces it was planned that for coastal defence there should be six Indian Air Force Volunteer Reserve Flights located at India's major ports. For the air defence of the North West Frontier and also to provide limited resources for small scale air offensives it was thought that seventeen squadrons would be necessary, made up of five Fighter, six bomber, one Bomber/transport and five army co-operation squadrons. Planning for North East India ~~envisaged~~ envisaged a possible Japanese air threat from bases in Yunnan or Siam; four fighter squadrons were considered necessary for the defence of the oilfields and refinery at Digboi (Assam) and the industrial areas of Calcutta, Asansol and Tatanagar. Observer Corps and fighter control organisations were included. Instead of a general reserve it was decided that squadrons should be sufficiently mobile for them to be rapidly deployed in any part of India.

Ibid

14. Thus the total force estimated as necessary for the air defence of India amounted to twenty-one squadrons and six Coastal Defence Flights comprising both R.A.F. and I.A.F. units, a target which had been agreed upon by the British Chiefs of Staff early in 1940 and subsequently approved by the War Cabinet. It should be mentioned here that whereas in peace the Government of India footed the defence bill, it was arranged that the wartime modernisation of the Air Forces should be financed, partly but not entirely, by the Home Government.

15. The policy of building up the air strength in India was to be implemented by a gradual increase as and when resources became available and when the strategic situation in general permitted. This was a long term policy and it could not be then forseen when it would be possible to send additional squadrons to India. Meantime the Air Ministry urged the Indian Government to develop the necessary airfield, base and maintenance facilities on a high priority on the assumption that the enemy would be Russia. Since this would obviously take time the Air Ministry, who first emphasised the need for airfields for instance in the Spring of 1940, maintained their pressure on India during the following years. In the event, however, progress was incredibly slow for a variety of reasons and it was not until February 1942 that the development of airfields was placed on a really high priority.

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D of Ops.
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16. Other planning in India centred on the expansion of the embryonic Indian Air Force. Formed on 1 April 1933, the I.A.F. which comprised but one squadron in 1939 had increased to three full squadrons by the end of 1941.

17. Several plans were produced for the I.A.F. none of which reached maturity. Originally it was planned to form one bomber and three army co-operation squadrons and five coastal defence flights. Then in May 1940, the Government of India, members of which were beginning to realise the importance of air power, announced their intention of expanding the I.A.F. to a total of fifteen squadrons. There were six R.A.F. squadrons in India at the time and it is evident that the fifteen squadron plan was conceived with the object of realising the twenty-one squadron target. But to put the plan into effect, large numbers of aircraft, instructors and equipment would have been necessary and since the Imperial Government was unable to provide these, the Government of India was asked to prepare a less ambitious plan which would require the minimum of resources from the United Kingdom. The result was a ten squadron plan, comprising three army co-operation, one bomber and six coastal defence squadrons, five of the latter to be formed by expanding the existing flights. The plan had an objective which at that time seemed practicable but subsequent events were to show that only after great difficulties would sufficient I.A.F. personnel be recruited and trained to man ten squadrons.

The Air Forces In India

18. Up to 18 October 1939, the Air Officer Commanding the Air Forces in India was Air Marshal Sir Philip Joubert de la Ferte, K.C.B., C.M.G., D.S.O. Taking over on that day, Air Marshal Sir John Higgins, K.C.B., K.B.E., D.S.O., A.F.C. held the appointment until 26 September 1940 when Air Marshal Sir Patrick Playfair, K.B.E., C.B., C.V.O., M.C. became the A.O.C. On 2 March 1942, Air Marshal Sir Richard Peirse, K.C.B., D.S.O., A.F.C. arrived in New Delhi from the Netherland East Indies and assumed command of the Air Forces in India and Ceylon.

Attempts to Develop the R.A.F.

IIJ50/47/21
Modernisation of the Air Forces

19. July 1939 saw the commencement of a scheme to provide India with sufficient Blenheim I aircraft to re-equip their four bomber squadrons. Nos. 11 and 39 Squadrons were the first to re-equip but no sooner had they received their first Blenheims than they were transferred to the Far East Command. In August 1939, No. 60 (Bomber) Squadron began to re-equip with Blenheim Mark I aircraft.

Ibid

20. Thus at the outbreak of war with Germany, No. 60 Squadron was the only unit in India which possessed a number of comparatively modern(1) aircraft. But the role of the Air Forces in India in 1939 was not one which demanded nor could expect a high standard of modern equipment and machines. That these forces were only suited to the limited role of tribal operations within India's borders describes not only their function but their capabilities. To fulfil this role, that of watch and ward coupled with proscription bombing that was more deterrent than damaging there were available:-

(1) Blenheim Is never became standard in the European theatre, their place being taken by the more powerful Mark IV.

No. 5 Squadron, R.A.F. Wapiti
No. 20 Squadron, R.A.F. Audax
No. 27 Squadron, R.A.F. Wapiti
No. 28 Squadron, R.A.F. Audax
No. 31 Squadron, R.A.F. Valentia
No. 60 Squadron, R.A.F. Blenheim I
No. 1 Squadron, I.A.F. Audax

Not one of these aircraft was considered to be first line operational aircraft by the Metropolitan Air Force at that time. Nos. 5, 20, 28 and 1 (IAF) Squadrons were army co-operation units; Nos. 27 and 60 Squadrons were bomber formations and No. 31 Squadron was classed as a bomber/transport unit.

21. Of these squadrons, No. 27 Squadron was employed as a Flying Training School and No. 60 Squadron had small detachments of from two to four aircraft at Karachi, Bombay, Madras and Calcutta for coastal defence duties. The remainder of the squadrons were located on the North West Frontier.

Ibid

22. The units comprising this small force were, according to peacetime standards, well equipped for the duties they had to fulfil. Wireless equipment was that specifically designed for army co-operation work and the same equipment was standard in the United Kingdom at the time. W/T and R/T sets could not be carried simultaneously in such obsolescent aircraft, however, and a changeover from morse to oral communication involved changing the installation. For communications between No. 1 (Indian) Group and the few stations which housed the squadrons, there was a somewhat primitive point-to-point W/T link available.

23. The air armament provided was naturally that suitable for the aircraft available. Multi-gun installations and modern sighting appliances, which were to play such a decisive part in the Battle of Britain, were almost unknown in India. The Vickers and Lewis machine-guns, standard on India's obsolescent aircraft, were inferior both in rate of fire and ease of maintenance to the Browning which had become universal on Home establishments. In Europe the design of bombs, both in weight and destructive power, had kept pace with the improved design of aircraft. For instance, the Mark I 250 lb. bomb still in use in India necessitated a slow and cumbersome fusing procedure and had been supplanted by the Mark IV bomb at all striking units in Britain.

24. The requisite bases, without which a modern air force could not operate, were entirely lacking. Of the best equipped and laid out airfields in India at the time, those at Lahore, Peshawar, Miranshah and Ambala, not one possessed a runway of more than 1,100 yards. This was not essential considering the take off run of the aircraft involved but would have been useless as bases for aircraft fit to wage offensive or defensive war against a major power. Moreover, all these bases were situated in the North West and not one was located in what was to become the area of operations.

IIJ50/47/19
Expansion of the Air Forces

25. During 1940 the preoccupation with the war in Europe of the nations able to supply aircraft and equipment left India low on the list of priorities. As development went on apace in England without the corresponding advance in India, the gap between the efficiency of air striking power of units in the two areas increased.

26. Nos. 11 and 39 Squadrons returned to India from the Far East in April 1940 but were immediately lost to the Command on being transferred to Aden to meet pressing

operational needs there. The only progress made in 1940 was the formation of a Flying Training School to relieve No. 27 Squadron(1) and the formation of five coastal defence flights to release No. 60 Squadron for service on the North West Frontier as a Blenheim I bomber Squadron. To increase the air striking force, No. 5 Squadron was converted from an army co-operation role to that of bomber but the only bomber aircraft available were obsolete Harts.

27. The five I.A.F.V.R. coastal defence flights had been in existence since August 1939, without possessing any aircraft however, and it was not until December 1940 that sufficient personnel had been recruited and trained to take over these duties from No. 60 Squadron. These flights comprised members of an Indian Air Force Volunteer Reserve, generally recruited on a territorial basis, and members of the regular Indian Air Force. Approximately 75 per cent of the personnel manning the flights were Indian and the remainder British.

IIJ50/47/21
Modernisation of the Air Forces.

28. Some attempts were made in 1940 to obtain modern aircraft for the squadrons in India. The inability of the Home Government to supply aircraft resulted in a visit to the United States by the Director of Civil Aviation, Government of India, to investigate the possibility of purchasing modern aircraft there. The telegram he despatched to the Defence Department in New Delhi in August 1940 reveals the impossibility of obtaining aircraft from a country whose total output was absorbed by the European war and by its own needs.

Telegram No. 10 7.8.40.

> "General factors are. Practically no useful types of which production not fully absorbed by British and American governments. The United States now refuse to grant export licence abroad or permit grant of manufacturing licence abroad without strong support of the British Commission..... virtually India must obtain her requirements by allocation from totals secured by Commission for British Empire".

IIJ51/15/6
Quarterly Reports by A.O.C.

29. Negotiations commenced in June 1940 for the erection of an aircraft factory in India, wherein it was hoped that aircraft for the R.A.F. and I.A.F. squadrons might be built. But trouble was experienced in obtaining the necessary materials since these would have to come from Britain. Lord Beaverbrook, then Minister of Aircraft Production, was opposed to the supply of raw materials required for the manufacture of operational aircraft, but his objections did not extend to materials for training types of aircraft. In September 1940 the War Cabinet considered the matter but withheld approval as it was thought that greater use could be made of materials by the well established aircraft factories in England.

30. The Viceroy himself, however, was personally interested, and possibly for political reasons, the Government of India decided to go ahead with the project. In December 1940 a contract was signed with the Hindustan Aircraft Company. Under this contract the Company, whose factory was being built near Bangalore, undertook the construction of twenty-four Vultee bombers and thirty Harlow trainers. Materials for the trainers were to be obtained direct from the United States. For the bombers material allotted to the Chinese

(1) No. 27 Squadron re-equipped with Blenheim Mark I aircraft in October 1940 and then became a twin-engined fighter squadron.

Government by the United States was to be used. The Chinese factory, at Loiwing, had at one time functioned under American control but had ceased production. It was anticipated that the Hindustan factory would commence production of the Harlows in May 1941 and of bombers in the following December. On the completion of this contract it was hoped that enough Mohawk fighters would be produced for two squadrons. But these plans were sadly to go awry for, by the beginning of 1942, no aircraft had been erected, mainly owing to the difficulty of obtaining skilled labour. The factory was subsequently relegated to the task of overhaul and repair of flying boats.

IIJ50/47/19 Expansion - Sept. 1939 to Dec 1943

31. Events in 1941 followed a similar course to those of the previous year but if anything the year was even gloomier. Promises were received for the delivery of Vengeance and Mohawk aircraft but of them there was no sign. The lack of response to India's appeals was due to two factors. Firstly, the over-riding priority of Far East demands consequent upon the growing Japanese threat and secondly, the unforseen delays in American production. The greatest disappointment for India in 1941, however, was the loss to India of her only two comparatively modern squadrons. No. 27 Squadron moved to Singapore in February 1941 and No. 60 Squadron to Burma during the same month. Moreover, India's solitary bomber/transport squadron, which received its first D.C.2 aircraft in May 1941, spent most of the year operating in other commands.

Ibid

32. India's greatest need was for modern fighter aircraft to defend the vital industrial areas of Bengal and Assam. No. 5 Squadron was therefore converted from bomber to fighter role with an equipment of Audax aircraft. This was done in February 1941 and after a period in North West India the Squadron moved to Calcutta in December for the defence of that city. A new unit formed in October 1941, No. 146 Squadron, and when equipped with Audax fighters moved to Assam; this was in November 1941.

IIJ50/47/21 Modernisation of the Air Forces.

33. The expansion of the Indian Air Force progressed a little in 1941. No. 2 Squadron was formed on 1 April with an equipment of Wapiti aircraft and No. 3 Squadron came into being on 1 October equipped with Audax. Both squadrons were classed as army co-operation units.

34. 1941 did not see the modernisation of the squadrons in India and they were forced to watch their machines and equipment become increasingly obsolescent and their efficacy as an air striking force grow progressively less. Apart from the operational side the problem of morale arose. It was generally felt by both officers and men that they were very much out of things - a forgotten force - and there was, of course, a universal wish to have done with India and to obtain a transfer to more active commands. In the circumstances it was difficult to keep up enthusiasm in training as the personnel concerned knew only too well that their aircraft and equipment was quite unsuitable for modern warfare and they could see no prospect of getting better material. In August 1940, for instance, India Command was promised Lysander aircraft but this type did not reach India until the end of 1941 when three army co-operation squadrons were converted.

35. The success of the R.A.F. in other theatres had brought the Service well into the public eye and the Army was particularly anxious to get as much information as possible under modern conditions of air warfare. But lacking modern equipment it was impossible to show what could be done and

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AOC.India to
C.A.S.
2.6.41

this in the long run adversely affected morale. In a letter to the C.A.S. the Air Officer Commanding said - "I am sorry not to be able to give you a more cheerful picture, especially in the middle of all the other things you must be competing with. I fully realise the difficulty over aircraft and the personnel position and that units actively engaged in operations must have first call. I hope that you will not think that morale out here is bad, or that I myself am pessimistic or depressed as such is not the case. But I think you ought to know the position as I see it and the difficulties we are likely to be up against if, among other things, nothing more definite can be given out to units regarding the likelihood of getting modern aircraft and equipment".

36. Nothing however could be done. All efforts were directed to the assistance of other commands and when threatened, everything possible was done to assist the air forces in Burma both as regards aircraft and equipment.

37. Thus at the outbreak of war with Japan in December 1941, the Air Force in India, bereft of its two most modern squadrons, was already an ineffective force. Then in January 1942, No. 1 Squadron, I.A.F. and No. 28 Squadron, R.A.F. went to Burma to assist the British and other forces fighting the Japanese there. No. 31 (Transport) Squadron with but two serviceable aircraft in India was also sent to the Burma front to assist in the evacuation of British forces and civilian refugees.

The R.A.F. in Ceylon

O.R.B.
222 Group
Sept 1941

38. Prior to March 1942, the R.A.F. in Ceylon was controlled by the Far East Command. After the fall of Malaya and the Netherland East Indies, responsibility for R.A.F. units in the Island was taken over by Air Headquarters, India. It seems appropriate therefore to trace the trend of events in Ceylon up to the time when control was transferred.

39. From Intelligence sources news came that raider activity might arise in the Indian Ocean and early in 1941 the Commander-in-Chief, East Indies Station (R.N) called for the provision of Catalina aircraft for the protection of our trade routes to the East. The Far East Command therefore appointed a Wing Commander as Senior R.A.F. Officer, Ceylon to command the R.A.F. units located in the Island and at bases in the Indian Ocean west of Ceylon. An R.A.F. Headquarters was set up at Colombo on 1 April 1941 and arrangements were made with the C-in-C., East Indies Fleet for the operation of flying boats to meet Fleet requirements.

40. The lagoon at Koggala on the south coast of Ceylon was prepared for the reception of two flying boats and a small ground staff. On 27 April 1941, two Catalina aircraft of No. 205 Squadron arrived at the base from Singapore.

41. It was impossible to provide adequate reconnaissance with flying boats based at Koggala so plans were laid for island bases to be established in the Indian Ocean. By refuelling at island bases air cover could be greatly extended. These advanced bases required substantial stocks of petrol, oil, food and equipment and the two R.A.F. depot ships based on Singapore were pressed into service in this cause. During April and May 1941 all bases were stocked and at odd intervals thereafter the depot ships replenished the islands.

42. Advanced bases were established at Male (Maldive Islands), Diego Garcia (Chagos Islands), Port Victoria (Seychelles) and

Port Louis (Mauritius). These bases were so established as to allow up to three flying boats to use them at any one time.

43. Owing to the small number of flying boats available for work in western Indian Ocean, their use had necessarily to be restricted to definite searches for raiders when positive indications of their presence had been reported, searching unfrequented waters in which enemy supply ships might be waiting to rendezvous with raiders and to search areas through which important ships were routed. It was not possible to fly regular patrols, locating, shadowing and reporting surface vessels being the main role of the flying boats. Offensive action could only be taken if surface vessels were not available to engage enemy forces.

44. Four advanced flying boat bases were opened and a main squadron base established at Koggala by September 1941. The two Catalina crews originally detached from Singapore played an important part in the work and it was largely due to their keenness and enterprise that it was possible to prepare the bases for operations in so short a time with the minimum of outside assistance. They were called upon to carry out searches over vast expanses of ocean while operating from desert islands lacking most of the facilities usually afforded flying boats on such operations. Meteorological forecasts were generally unobtainable except in vague terms; there were at first no D/F facilities though later it became possible for transmissions to be made in order that aircraft might take bearings. The island bases themselves afforded nothing but discomfort and hard work; refuelling had to be done by hand with the limited assistance of local inhabitants. Communications too constituted a difficult problem since they had perforce to be on Naval channels pending the establishment of an R.A.F. organisation.

45. To obtain adequate reconnaissance over the Indian Ocean it was thought that four flying boat squadrons would be necessary, two in Ceylon, one at Mombassa and one at Durban. Although the squadrons did not materialise, the organisation was completed by September 1941 with the opening of further bases at Mombassa, Lindi, Dar-es-Salaam and Durban. The target of four squadrons was, of course, greatly increased after the entry of Japan into the war.

46. Until March 1942 the island of Ceylon was primarily a Naval responsibility and the majority of aircraft there belonged to the Fleet Air Arm. The two main airfields in the Island, China Bay and Ratmalana were R.N. establishments but were later taken over by the R.A.F. In addition to the Catalina detachment, No. 273 Squadron, R.A.F. was located in Ceylon but, strangely perhaps, most of its aircrews were F.A.A. personnel.

47. When Headquarters, No. 222 Group formed at Colombo on 1 September 1941, under the control of the Far East Command, the Group had under its control:-

R.A.F. Station, Koggala

No. 205 Squadron Det.	- 2 Catalinas

China Bay (Trincomalee)

No. 273 Squadron	- 4 Vildebeests
Station Flight	- 4 Seal a/c.

Ratmalana (Colombo)

No. 273 Squadron Det.	- 1 Vildebeeste - 1 Seal

Advanced Flying Boat Bases

Male, Maldive Islands
Diego Garcia, Chagos Archipelego
Port Victoria, Seychelles
Port Louis, Mauritius
Mombassa, East Africa.
Lindi, East Africa
Dar-es-Salaam, East Africa

R.A.F. Depot Ships

Shenking Tung Song	When on East Indies Station

48. This was the situation in Ceylon when in March 1942, the R.A.F. units based on the island came under the control of Air Headquarters, India.

SECTION II

THE SITUATION IN MARCH 1942

The Japanese Offensive

USSBS. Reports

1. The very effective Japanese attack on Pearl Harbour was executed for the loss of only twenty-nine aircraft. Two days later the enemy found the Prince of Wales and Repulse without air cover off Malaya and destroyed them for the loss of a mere handful of bombers. Allied air power in the Philippines, Malaya and the Netherland East Indies was virtually eliminated, mostly on the ground, in the matter of days. These enormous land areas, once local air superiority had been achieved, were laid open to occupation.

2. As these achievements indicate, the Japanese began the war aware of the fact that major offensives could not be undertaken without local control of the air. They also appreciated the vulnerability to air attack of surface objectives, both on land and sea. The Japanese failed, however, to appreciate the full scope and complexity of the requirements for maintaining control of the air. The Japanese aircraft production programme was inadequate, as they subsequently discovered, not only in relation to that of the Allies but even in relation to their own economy. Their planning for training, maintenance, supply, technical development, intelligence and full co-ordination with their land and sea forces, was limited in relation to the requirements that subsequently developed.

3. How the original Japanese advance was stopped, how we achieved air superiority, at first locally, but eventually more and more generally, is a story for a later volume. But now, let us trace the developments which led up to war with Japan and to the arrival of the Japanese armies at the gates of India. The role of air power cannot be considered separately, however, from the roles of the naval and ground forces, nor from the broad plans and strategy under which the war was conducted.

4. Japan's governmental structure provided no effective civilian control of her Army or Navy. In the years between the 1931 invasion of Manchuria and the 1941 attack on Pearl Harbour, the military cliques of Japan exerted a progressively tighter control over the foreign and domestic affairs of the nation. These cliques included groups within both the Army and Navy. But because of the repeated military successes of the Japanese Army in Manchuria and China and the more aggressive nature of the Japanese Army leaders, the political position of the Army was higher than that of the Navy. The final decision to enter the war and to advance into the Philippines, the N.E.I., Malaya, Burma and to the south-east was, however, made with the full concurrence and consent of all important Japanese Army and Naval leaders and of almost all her important civilian leaders.

5. This decision, to which they were committed by mid-October 1941 was based on a careful evaluation. They thought that the threat of Russia on the Manchurian front had been neutralised by the decisive victories of Germany in Europe which might well have led to the complete collapse of the Soviet Union. Great Britain was considered to be in such an irretrievably defensive position that, even if she survived, her entire war making potential would be spent in a desperate effort to protect her homelands. The forces which the United States and allies could immediately deploy in the

Pacific, particularly in the air, were insufficient to prevent the fully trained and mobilised forces of Japan from occupying within three or four months the entire area enclosed within the perimeter consisting of Burma, Sumatra, Java, northern New Guinea, the Bismark Archipelago, the Gilbert and Marshall islands, Wake Island and the Kuriles. With the Burma Road severed China would be isolated and forced to negotiate. The United States, committed to aiding Great Britain, and weakened by an attack on Pearl Harbour, would be unable to mobilise sufficient strength to turn to the offensive for eighteen months or two years. During this time the Japanese planned to fortify forward airfields and bases. So strengthened, this perimeter would be backed by a mobile carrier striking force based on Truk. While the stubborn defence of the captured perimeter was undermining Allied determination to support the war, the Japanese would speedily extract Bauxite, oil, rubber and metals from Burma, Malaya, the Philippines and the N.E.I., and ship these materials to Japan for processing thereby strengthening and sustaining her industrial and military machine. The weakness of the Allied democracies would make it impossible for them to continue all out offensive action in the face of losses which would be imposed by fanatically resisting Japanese soldiers, sailors and airmen. Thus, thought Japan, the Allies would compromise and allow Japan to retain a substantial portion of her initial territorial gains.

6. Certain civilian and naval groups in Japan expressed doubts about a strategy which promised no conclusion to the war other than negotiation. The Navy, however, after the Allied economic embargo of July 1941, were concerned about Japan's declining oil supply. Such civilians as were reluctant were over-ruled and were swept along with the more dynamic opinion. None of the responsible Japanese leaders believed that within any forseeable time could Japan follow a more ambitious programme, unless initial operations went extraordinarily well.

7. In accordance with the approved plan, the Japanese Army was given the responsibility for conquering Malaya, Sumatra and Burma while their Navy launched operations in the Philippines, Borneo, Celebes, Java, New Guinea, the Bismark Archipelago, the Gilberts and against Wake Island. The Army was to assume control of the Philippines as soon as landing forces were established ashore. On 7 December 1941, the Japanese Army Air Force to support these operations comprised 1,375 aircraft and the Navy 1,250 giving a total of 2,625 first line aircraft.

8. The enemy did not depend solely on the volume of their air strength in the initial operations. More than on numbers, the Japanese relied on surprise and speed of advance and on the training and experience of their airmen. Facing the Japanese the Allies had about 1,290 aircraft most of which were obsolescent. These forces were quickly overwhelmed, fifty per cent of our aircraft being destroyed on the ground.

9. Following their initial success at Pearl Harbour, in the Philippines and in Malaya, Wake and Guam were occupied in December 1941 and Rabaul in January 1942. Singapore and Sumatra fell in February, Java in March, and by the end of May Burma had been occupied. After only five months of war the enemy had carried out the substance of their original plan and with greater ease than they had foreseen. Much of the equipment which had been scheduled for movement to the southern regions was found to be unnecessary and was

left behind in order to achieve greater speed. By July 1942 the Japanese held a perimeter of Burma, Sumatra, Timor, northern New Guinea, the Solomons, the Gilberts, the Marshalls, Wake and the western islands of the Alutians.

10. The magnitude of these successes encouraged the more daring Japanese planners to consider expansion beyond the original perimeter. Accordingly a new plan was approved, providing for further advances in the Solomons and New Guinea. If successful this was to be followed by an advance into New Caledonia, Samoa and the Fiji islands, the capture of Midway and the temporary occupation of the Alutians. The completion of this programme would have cut off the line of communication between Australia and the United States and also reduced the threat from Alaska. There was no plan for a further advance westwards from the India-Burma border.

11. By stretching and over-extending her line of advance, Japan was committed to an extensive and exacting supply problem; she delayed the fortification of the perimeter originally decided upon in the Pacific, jeopordised her economic programme for exploiting the areas already captured, and laid herself wide open to an early counter attack in far advanced and weak positions in the Pacific. Japan never succeeded in fulfilling her additional plan of conquest.

The Loss of Burma

12. Following the disaster in Malaya and the Netherland East Indies, Rangoon fell on 8 March 1942 and there appeared to be little chance of saving Burma from complete Japanese occupation. India herself and Ceylon were thought to be under imminent threat of invasion. With the enemy approaching India's eastern frontier and with the Naval bases of Malaya in Japanese hands, India was promoted from a position of comparative security to that of a major base from which the seeds of the reconquest of Burma might spring. Had India and Ceylon been lost China would have been finally isolated and probably knocked out of the war and our line of communication round the Cape of Good Hope to the Middle East and Persia would have been threatened. India and Ceylon, therefore, became of great strategic importance to the Allies.

13. American lend-lease supplies for China had hitherto been shipped to Rangoon, Burma's only major port, and then conveyed by rail and road through Mandalay and Lashio to Kunming. There was no land communication between India and Burma save for the few jungle paths passable only to animal traffic. Once the Burma Road had been effectively engulfed in the tide of the Japanese advance, India became important as a supply base whence it was thought that sufficient materials might be delivered by air to keep China fighting until such time as land communications could be re-opened. This task of developing an aerial life-line was essentially an American commitment though the British had their part to play in defending India and in building up communications facilities in Bengal and Assam.

The Forces Available

Despatch by F.M.Wavell March to Dec. 1942

14. The forces available for the defence of India and Ceylon were dangerously weak. The Eastern Fleet, based in Ceylon, had only one modern battleship and was in no position to dispute with the enemy fleet the command of the Bay of Bengal or of the waters around Ceylon. The Army had only one British and six Indian divisions available for the defence of the whole sub-continent and Ceylon, apart from the forces

assigned the task of defending the North West Frontier and for the maintenance of internal security, both of which were far below the strength estimated as necessary for these commitments. Not one of these divisions was complete in ancillary troops, adequately trained or properly equipped; three divisions had two brigades only. The number of A.A. guns to defend Calcutta, (India's largest city) her most important war industries and other vital points which were soon to come within effective bombing range, was less than one tenth of an estimated total requirement.

IIJ50/47/20 A.O.C.-in-C. to C.A.S.

15. Similarly inadequate for the defence of India and Ceylon were the available air forces and the number of airfields too fell far short of requirements. The vast sub-continent of India possessed an air force consisting of three I.A.F. squadrons equipped with Audax and Lysander aircraft, and four R.A.F. squadrons whose most modern aircraft comprised a handful of Mohawks, the remainder being Audax, Lysander, and D.C.2 types. In addition there were six I.A.F.V.R. coastal defence flights equipped with twelve year old Valentias, one of which surprisingly enough observed the Japanese Fleet when the latter cruised up the east coast in April.

16. Calcutta, the second largest city in the British Empire was defended by eight Mohawks; an Audax fighter squadron was at Din Jan (Assam) while most of the transport squadron's aircraft were detached to the Middle East Command. The residue of this imposing force was located on the North West Frontier from which direction, ever since our connection with India, invasion had been expected but whence, since the descent of Nadir Shah in 1739, it had never come.

Ibid

17. The situation in Burma was slightly better as there were nine squadrons, of which No. 1 (I.A.F.) Squadron did remarkably well in the first real operations, other than frontier warfare, Indian pilots had been called upon to undertake. In Ceylon there was practically no air force at all until four squadrons arrived there from the Middle East during March 1942.

18. Owing to the fact that all efforts in the way of equipment had been directed for so long to the assistance of other commands and more recently to Burma, the position as regards modern aircraft was desperate. What was perhaps even more deplorable was the lack of well equipped airfields, both in numbers and size. After the entry of Japan into the war orders were issued for a very modest programme consisting of twenty-five airfields in North-East India and nine in Ceylon. Siting boards had been appointed but very little progress had been made. At the beginning of March 1942, no airfields were complete to the recognised standards of runways and accommodation. In the North-East, two airfields were being used by operational units; in the North-West four, and in other parts of India six. In Ceylon there were two airfields and a flying boat base.

19. One of the greatest handicaps under which the Air Forces were working in Burma, and to which a considerable number of losses on the ground could be attributed, as evidenced by the paralysing enemy attacks on Magwe on 22 and 23 March, was the lack of an adequate warning system. An Observer Corps system had been set up in the North-West of India and a plan for a screen east of Calcutta had been laid, but no posts established. In southern India there were no plans of any kind for an observer system. The only radar station in the whole Command was in Burma. In so far as operations rooms were concerned, there was not even a Combined Operations Intelligence Centre at Air Headquarters. Of Ack Ack artillery and plans for the defence of the few airfields in existence there was no sign.

20. Such was the air defence situation in India at the beginning of March 1942 when it was clear that the defence of India was primarily a matter of sea and air power.

Tasks to be Accomplished

Despatch by F.M.Wavell Mar-Dec 1942

21. The situation in Burma rapidly deteriorated during March and it was becoming increasingly evident that the tired forces in Burma were unlikely to hold the enemy while the absence of communications between Assam and Upper Burma made it impossible to reinforce them. With the Rangoon airfields in Japanese hands, Calcutta and the industries of the North-East were exposed to heavy air attack, while shipping and ports were vulnerable to carrier borne attack at any time.

IIJ50/47/20 A.O.C-in-C., to C.A.S.

22. The Air Forces were therefore faced with the twofold task of formulating and putting into effect plans for a vast expansion while at the same time trying to maintain air forces in Burma. In appreciating the situation in India as a whole together with Ceylon, it was thought that the areas most threatened were North-East India, the east coast, Southern India and Ceylon. Elaborate plans for the development of airfields, the provision of wireless, petrol, bombs, ammunition, airfield defence etc., and the system of control for the proper functioning of a greatly expanded Air Force to work in conjunction with the Navy and Army were laid with this threefold threat in mind.

Ibid

23. In order to work out these plans in detail it was obvious that Air Headquarters, India required complete re-organisation. There were a number of extremely complicated problems to be solved, administrative as well as operational. There was the Burma campaign, the threefold threat, policing of the North-West Frontier, there was training and maintenance. Squadrons of every type were involved, training of every description had to be included and, as far as possible, local resources had to be developed in order to provide for the thousand and one articles of equipment which were either not available from the United Kingdom or America or which could not be provided in time. Arrangements had to be made for the reception of thousands of R.A.F. personnel from the Far East who arrived by devious ways without money, equipment, spare clothing or homogeneity of a unit. All this had to be built up from the existing slender resources, and Air Headquarters as it was in March 1942, consisting as it did of about thirty officers many of whom had been in India for some years, was clearly incapable of solving one to say nothing of the incredible number of problems which presented themselves with bewildering rapidity.

IIJ50/47/20 A.O.C-in-C., to C.A.S.

24. It was first necessary to obtain approval from the Government of India for a new establishment for Air Headquarters, India. Almost overnight, the Air Forces in India had emerged from an ill-considered trifle - rather less important to the General Staff than a mule transport company - to be a major factor in its defence. It had taken its place beside the sorely tried Royal Navy as their only hope of defending India. It is true to say(1) that the Army had always held the whip hand in the defence arrangements of India, despite the fact that this immense land area with 3,000 miles of coast line had remained intact for 150 years as a result of the unobtrusive power of the Royal Navy rather than any action on the part of the Army. Indeed, it was soon apparent that there were going to be great difficulties in persuading the General Staff to understand that in future the Air Forces

(1) See Section I.

would have to be treated on a basis of equality with themselves and that they would have to go short of a large number of items of equipment and above all, priority of building construction, if the new Air Force was to have a chance of developing sufficiently rapidly to ward off the anticipated Japanese invasion which threatened to engulf them all.

Ibid

25. The question of status was an important one. Army Headquarters had two generals, one of them the Commander-in-Chief and the other his Deputy. Five principal staff officers were lieutenant-generals and at least thirty major-generals were in charge of branches. Brigadiers were even more numerous. Against this impressive background the R.A.F. could only muster one air marshal and two air commodores. Air Headquarters was accommodated in biblical fashion in a stable, while G.H.Q. lived in a palace nearby. Few in G.H.Q. knew where Air Headquarters was. Some of them did not know that one existed and they certainly would never have believed that by the middle of 1943 the establishment of the Air Forces might exceed that of the British Army in India.

26. Next to the power of the Military machine in India was the power of the Finance Department of the Government of India. This cumbersome administration whose background of rules and regulation had flourished like the green bay tree since the days of Clive, could not readily adapt itself to the needs of total war. After a good deal of effort by the Commander-in-Chief, General Wavell, and by the Air Force, a realistic view of the need for an extensive air organisation was taken and the financial pundits agreed to accept a position in which they approved all proposals as a formality. The financial obstruction remained dormant, however, and it seemed that once the pressure on India was relaxed, delays and interference in the progress of an immense programme might occur. In November 1943 the British Government decided to finance the war in South-East Asia themselves.

SECTION III

THE DEFENCE OF INDIA AND CEYLON

Deployment Of Reinforcements

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1. In March, 1942 and during subsequent months great efforts were made to reinforce India Command, particularly the Air Forces, in order to meet the growing Japanese threat to India and Ceylon. The problem of deploying these reinforcements resulted in much discussion between General Wavell and Air Marshal Peirse on the one hand, and the British Chiefs of Staff on the other. India Command thought that too much of the slender resorces becoming available were being allocated to Ceylon, whereas air reinforcements in particular were required for Burma and North-East India. Since the resources available were totally inadequate, it seemed to General Wavell that it was essential to consider their distribution with the utmost care and on a policy which was as offensive as possible.

IIJ28 D of Ops. Folder. C.-in-C. to C.O.S.

"The function of the air forces in Ceylon" he said "is purely defensive to protect Fleet bases. The Eastern Fleet will certainly be unable to venture far into the Bay of Bengal if the command of the air is lost on the India-Burma frontier. Conclusion is that the Japanese attack on India will be made via the Burma coast under cover always of shore based air superiority which will make it dangerous for our warships to interfere. Ceylon will be threatened or raided but not attacked".

2. General Wavell was evidently taking into consideration Japanese methods up to this time which had shown that their policy was to proceed methodically and not to attempt invasion without first securing naval and air superiority. If their object was to be India the chances were that they would establish a succession of air bases at Rangoon, Akyab, Upper Burma and possibly Chittagong after which the Eastern Fleet would be powerless to prevent a seaborne invasion of Bengal.

Ibid

3. General Wavell considered that Ceylon should be reinforced to an extent that would prevent a raid of the Pearl Harbour type from carriers, and to protect ports and airfields against possible smash and run landing parties. The main air forces should be concentrated in North-East India (where the principal war industries were located) in order to achieve air superiority. "This" said Wavell "will enable a hold to be maintained in Upper Burma and connection with the Chinese; it will enable the war industries to be protected; it will prevent large scale sea-borne landings in Bengal and Orissa; it will enable the Navy to operate in the Bay of Bengal and it will enable our air forces to strike a blow against the Japanese Air Force which is their weakest link - nowhere else can we do this effectively".

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4. Although the Chiefs of Staff in London agreed with the policy of establishing a bastion in North-East India, the problem they had to decide was the right proportion of our forces to allot to that area vis-a-vis Ceylon. The view of the Chiefs of Staff was that the security of the Indian Empire depended as a last resort on our ability to control the sea communications in the Indian Ocean. To achieve this it was evident that Naval bases would have to be secured and the only ones in sight for some time to come were at Trincomalee and Colombo. Moreover, Ceylon in the hands of the enemy would certainly threaten the Allied life-line not only to India but also to the Middle East and the Persian Gulf. Thus the Chiefs of Staff gave Ceylon priority over North-East India.

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5. The Chiefs of Staff confirmed Wavell's general appreciation of the situation in India and Ceylon. They recognised the powerlessness of the Eastern Fleet to offer effective opposition, accepted that the land forces were inadequate, deficiencies which could not be met until the end of 1942 and that the number of air squadrons required was sixty-four. A message from Whitehall to the Commander-in-Chief said -- "If the enemy press boldly westwards without pause for consolidation and are not deterred by offensive action by the Eastern Fleet or American Fleet, nor by rapid reinforcement of our air forces in North East India, our Indian Empire is in grave danger".

The Threat to India and Ceylon

Ibid

6. May and June, 1942 seemed likely to be critical months for India. It was therefore disturbing to find that the Eastern Fleet, instead of being strengthened, was to be further reduced for operations in the Mediterranean to provision Malta, that two brigades on their way to reinforce India were being diverted to Madagascar and that an East African brigade expected for Ceylon was also going to Madagascar. Moreover, the Australian Government demanded the return of their two brigades stationed in Ceylon. Wavell protested with some vigour but the Minister of Defence who had to study the overall picture of strategy decided that an attempt to relieve Malta must be made, that Madagascar must be occupied to secure the sea routes to the Middle East and India and that it was necessary for political reasons to release the two Australian brigades. Events proved his judgment correct since the Japanese did not immediately launch an attack on India. The air forces in India and Ceylon were reinforced during the summer and two British divisions gradually arrived. By June, 1942 when the monsoon broke, the critical period for India had passed and there began a programme of re-organisation and preparation.

7. Meanwhile, the troops in Burma under General Sir Harold Alexander were being driven northwards and after the Japanese breakthrough to Lashio in the latter part of April, General Wavell ordered the withdrawal of the Burma Army across the Indian frontier into Assam. This was completed by 20 May, 1942.

8. But when the enemy had overrun Burma, they paused at the foot of the great curtain of mountain and jungle that under the successive names of Naga, Chin and Arakan hills extends southwards from the eastern Himilayas to the sea and seal off Burma from India. This desolate tract is never less than 100 miles deep and while it constituted a barrier against a Japanese land advance into India, it also gave the enemy a grip on Burma which it was realised the Allies would have great difficulty in prising loose.

IIJ50/47/53 A.C.S.E.A. File No. 53.

9. Thus the nature of the frontier and poor communications combined with Japanese naval and air superiority in the Bay of Bengal, made the enemy secure in this area against counter attack at least for some time to come. It appeared doubtful whether Japan would see the advantage of exchanging this strong position for one which left her open to attack, which would certainly have been the case if she occupied Bengal and Assam. Whether or not the Japanese would attack India was thought to depend upon such various factors such as an attack upon Australia, the existence of a threat to the Japanese homeland from Pacific bases, the nature of Russo-Japanese relations and last but not least, a German offensive in the Middle East or the Caucasus which might provide Japan with a favourable opportunity to attack India.

Ibid

10. On the strength of this reasoning, the Joint Planning Staff in New Delhi considered that any attempt by the enemy to attack India would be to secure Ceylon and the west coast of India; only in this way could the enemy secure a position as strong as that which she had gained in Burma. The essence of the joint plan evolved by the Planning Committee in May, 1942 was for a series of strategic withdrawals from North-East India, Ceylon and Southern India and to concentrate the entire armed forces in the west for a determined defence of Bombay. Arrangements must be made, they said, and a decision taken immediately to withdraw the bulk of two divisions from Assam and Comilla (Bengal); unless this was done there was a grave risk of the divisions being cut off if the enemy made a successful landing in western Bengal. Should this happen then there would be few troops left with which to offer resistance farther west.

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11. In the event, however, General Wavell decided to garrison strongly the North-East. When the Japanese reached the India-Burma frontier, IV Corps was responsible for the defence of Assam. The Burma Army, or what was left of it, passed under the command of IV Corps on arrival in India. Apart from these troops IV Corps had only two brigades for the defence of the central sector in the Indian State of Manipur. XV Corps was responsible for the defence of Bengal against a sea-borne invasion, for which two divisions were available. Farther west in Bihar an incomplete division was assigned the role of meeting a sea-borne invasion of Orissa. It also constituted the only reserve available for Bengal and Assam.

Ibid

12. Thus IV Corps had some 500 miles of frontier to guard with little except the tired and disorganised army which had come out of Burma, while XV Corps with two incomplete and partly trained divisions had to secure some 4-500 miles of land frontier and sea coast. The division at Bihar was responsible for another 2-300 miles of coastline besides acting as a general reserve. To support the Army in Bengal and Assam, the R.A.F. had fourteen squadrons(1) by the end of May, 1942, some of them battle weary and ill-equipped.

Communications Problems

Despatch by F.M.Wavell Mar.-Dec. '42

13. Apart from the number of troops available the defence of India, particularly the North East, was complicated by the paucity of communications. Assam is cut off from the rest of India by the great Brahmaputra river which is unbridged throughout its length. Its level fluctuates during the year by as much as 25 feet and its course sometimes by several miles. The railway system east of the Brahmaputra was a single track metre gauge railway with no modern train control system and very limited resources in locomotives and rolling stock. The system was served by waggon ferries at two places over the river, capable of dealing only with a limited number of waggons each day. There was no all-weather road from India to the west bank of the Brahmaputra, while the only west to east road in Assam was a second class single width road which ran from Gauhati ferry to the north-east, so that deficiencies of the railway could not be off-set by road transport. Indeed, all vehicles had to be transported to Assam by rail. Nor could river transport solve the problem. Many steamers had been sent to Iraq earlier in the war and the river system merely led to the railway system which was the limiting factor.

(1) See Section V

14. On the Bengal front, communications were little better. The delta of the Ganges is unbridged and the railway which terminates a short distance beyond Chittagong was single line metre guage. Some use, however, could be made of sea transport and Chittagong held possibilities for development as a minor port.

15. In February, 1942 attempts were under way to construct an all-weather road from Assam across the Naga and Chin Hills. At the same time construction of an adequate railhead and advanced base at Manipur station on the Bengal and Assam Railway was undertaken. The station was really a wayside halt in the heart of dense jungle at the spot where the road to Imphal commenced. It was, unfortunately, intensely malarious.

16. Not only had this slender line of communication to supply the Army in Manipur but also the air bases in Assam serving the air ferry to China. The development of communications was therefore of great importance.

SECTION IV

JAPANESE ATTACKS ON CEYLON APRIL 1942

Introduction

1. The close of the first quarter of 1942 was among the most critical and anxious periods of the war in the Far East. Following the fall of Singapore on 15 February, the story of Japanese successes had culminated in the surrender of Java on 9 March. A day previously Rangoon had fallen and the situation in Burma was steadily deteriorating. The Andaman and Nicober islands had been occupied by the enemy. Four thousand miles to the east, Japanese landings had taken place at Salamoa and Lae in New Guinea and northern Australian ports were subjected to air attack - hitherto the precursor of invasion. Attacks were also developing in the Solomon Islands. It could not be forseen where the enemy would strike next, Australia, India and Ceylon all seemed likely Japanese objectives.

2. At the time, the naval situation from the Allied point of view was at its lowest ebb. After the disastrous battle of the Java seas on 26/27 February, surviving naval units had withdrawn to Ceylon or Australia. The American Fleet was still licking its wounds inflicted at Pearl Harbour and could not be ready for offensive operations for some months. The Japanese control of the seas in the South-west Pacific and Indian Ocean was therefore absolute.

3. During March 1942 the British Eastern Fleet gradually assembled as ships became available and at that time consisted of five Battleships, three aircraft carriers, seven cruisers, sixteen destroyers and three submarines. Early in April 1942, the Japanese launched a heavy attack by surface vessels and aircraft on shipping in the Bay of Bengal concurrently with a submarine offensive on the west coast of India and carrier borne raids on Colombo and Trincomalee. These attacks cost us two cruisers, one aircraft carrier, three light naval units, nearly 150,000 tons of merchant shipping and a considerable portion of our air strength in Ceylon.

Preparations for Defence

4. Mention has already been made of the policy affecting the reinforcement of Ceylon(1) but more detail is required regarding the preparations made for the defence of the Island. In February 1942 there appeared to be no co-ordination of effort and ideas. The Navy was thinking in terms of Pearl Harbour and protection of trade routes, while the Army was thinking of repelling a two divisional assault.

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5. Ceylon's problem was essentially an air and naval one and it was imperative that superiority in these spheres be established. If this could not be achieved, then invasion would undoubtedly have been possible and the Army could have done little to stop it. What the Royal Navy required was adequate air reconnaissance to obviate the possibility of surprise raids by enemy task forces and also to protect trade routes, particularly on the east coast of India between Ceylon and Calcutta. Fighter defence and an air striking force were other ingredients for defence since a main factor

(1) See Section III Paras. 1 - 5.

influencing the pattern of sea warfare was the control of the air above those areas of sea in which naval units were operating. The previously accepted conception of Naval warfare was no longer axiomatic and had been outmoded through the rapid evolutionary advance in the power of air weapons. Surface forces could no longer decide the balance of power at sea. At Pearl Harbour, the greater number of key American naval units were destroyed or damaged, not as a result of surface action, but by carrier borne attack. Shortly afterwards the Repulse and Prince of Wales were sunk by air attack and this further emphasised that naval surface action could not survive the air age.

6. Topography decreed that airfields in Ceylon must be almost on the coast and this meant that they would be highly vulnerable. Radar coverage therefore became of great importance so as to ensure that aircraft would not be caught on the ground. Events were to prove the importance of radar cover for at the time of the Japanese raids, Colombo possessed no early warning system while the station at Trincomalee was in operation. During the raid on the latter port our fighters achieved better results against greater odds than at Colombo.

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7. At the beginning of March 1942 the Royal Navy and the R.A.F. were working independently in regard to the provision of facilities for land based aircraft with the result that each service was, unintentionally, competing for land, labour and the like. But co-operation between the two services was good and with the development of defence measures and the reinforcement of the Island, a system of co-ordination was evolved which more or less worked satisfactorily.

Air Reinforcements

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8. In accordance with the policy of the Chiefs of Staff to reinforce Ceylon as rapidly as possible and on high priority, the first moves in this direction were made in February 1942. Towards the end of that month, No. 258 Squadron was formed from personnel of the original unit who had drifted into Ceylon from the Netherland East Indies. Eight Hurricanes erected at Karachi were allocated to Ceylon and were flown there on 23 February. With these aircraft plus the obsolescent Fleet Air Arm aircraft already in Ceylon, the semblance of an air defence organisation was set up pending the arrival of a Blenheim and two Hurricane squadrons from the Middle East.

9. On 26 February 1942 the aircraft carrier H.M.S. Indomitable sailed from a Middle East port with sixty crated Hurricane aircraft on board, together with aircrew and ground personnel of No. 30 and No. 261 Squadrons. During the voyage the Hurricanes were erected and on 6 March, aircraft of No. 30 Squadron were successfully flown off, landing at Ratmalana airfield near Colombo. A day later No. 261 Squadron pilots flew off their aircraft and landed them at China Bay, Trincomalee. In the meanwhile, No. 11 Squadron's Blenheim IV aircraft had flown from the Middle East to Ceylon to form the basis of an air striking force. But as a force it was totally inadequate.

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10. A Japanese attack on Ceylon either in the form of a raid or an attempt at invasion was expected, and the Commander-in-Chief, Ceylon was somewhat perturbed at the weakness of the air striking force located in the Island. Apart from No. 11 Squadron there was only a Fleet Air Arm squadron of seven Swordfish aircraft and a few Albacores, which were useless against heavy opposition in daylight attacks. No. 11 Squadron had had little experience operationally and were untrained in oversea navigation, ship recognition and the bombing of moving

targets. The F.A.A. torpedo/bomber crews were also untrained and inexperienced. Thus Ceylon had virtually no effective means of striking at the enemy and an urgent appeal was made by the C-in-C., Ceylon to the Chiefs of Staff for the provision of Beaufort Torpedo/Bomber units complete with crews trained in anti-shipping torpedo attack.

11. There was, however, no immediate prospect of getting these aircraft for Ceylon since Beauforts could only be supplied after considerable delay and at the expense of the Middle East Command where the type was fully employed and still in inadequate numbers for essential needs. "Until we can build up the strength of the Middle East" the C.O.S. signalled on 12 March "you must do all you can to extract the maximum value from aircraft and personnel available in Ceylon".

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12. Attempts were then made to enlist the assistance of the Middle East Command in the provision of trained aircrews and ground personnel with which to bring the torpedo units in Ceylon up to a pitch of operational readiness. Experienced aircrew were also essential for No. 11 Squadron and a request was made to Air Chief Marshal Tedder in the Middle East to send one officer to Ceylon who had had experience of shipping strikes. Air Chief Marshal Tedder, however, was woefully short of such personnel and all he could do was to send one Blenheim crew, the captain of which was a sergeant pilot.

13. The number of aircraft which could be deployed in Ceylon was dependent upon the airfield accommodation available. Serious conjestion occurred at Ratmalana and China Bay since in addition to R.A.F. reinforcements, the Fleet Air Arm moved new squadrons into the Island. By the ejection of the Chief Justice from and the elimination of his house within the precincts of the racehourse at Colombo, a well disguised runway was quickly driven through the middle of the course itself. No. 258 Squadron occupied this hastily prepared airfield and on Easter Sunday caused considerable discomfiture to the Japanese raiders who evidently thought that a racecourse in a British possession was sacred to Chief Justices and horse copers since they made no attempt to attack it.

14. By the end of March 1942, the situation in Ceylon as regards air defence had greatly improved, though still far from being ideal. At Trincomalee the radar system had begun operating but at Colombo the radar system, though in process of installation, could not be made operational in time for the Japanese attack. Of aircraft the following were available:-

R.A.F.

No. 30	(Hurricane)	Squadron - Ratmalana
No. 258	(Hurricane)	Squadron - Racecourse
No. 261	(Hurricane)	Squadron - China Bay
No. 273	(Fulmar)	Squadron - China Bay
No. 11	(Blenheim)	Squadron - Ratmalana
No. 205	(Catalina)	Sqn.Det. - Koggala
No. 413 (RCAF)	(Catalina)	Sqn.Det. - Koggala

F.A.A. (on shore)

No. 803	(Fulmar)	Squadron
No. 806	(Fulmar)	Squadron
No. 788	(T.S.R.)	Squadron(1)

(1) A Torpedo Spotter Reconnaissance Squadron equipped with Swordfish and Albacore aircraft.

In all, the Royal Air Force had a total of 50 serviceable Hurricanes Mark I and II, 14 Blenheim Mark IV, six Catalinas and a few Fulmars.

Naval Movements

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15. On 28 March 1942 the Royal Navy received intelligence that there were strong possibliities of a Japanese attack by air on Ceylon on or about 1 April. The Naval Commander-in-Chief's appreciation was that the enemy's most likely target would be Trincomalee or Colombo, and perhaps both ports simultaneously. The Naval Commander therefore decided to concentrate his Fleet on the evening of 31 March in a position from which he could launch an air attack on the enemy force during the night.

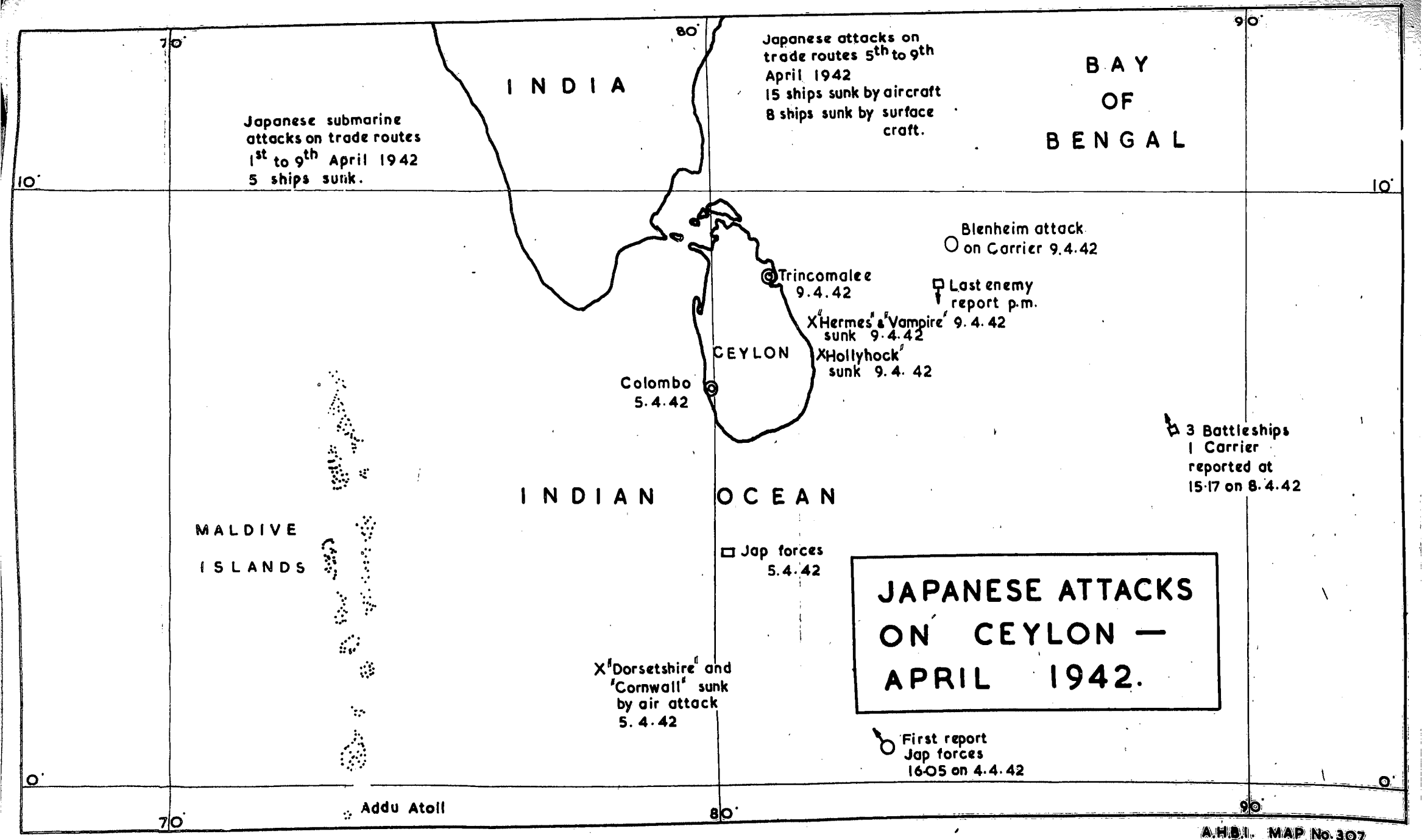
16. Catalina patrols were arranged to a distance of 420 miles from Colombo to the south-east of Ceylon, to locate the enemy raiding force. It was realised that the enemy might approach from any direction from the north-east to the south-west, but as only six flying boats were available and not more than three could be on patrol at any one time, the area of search had to be narrowed.

17. After the Eastern Fleet had put to sea, their subsequent movements were affected by the necessity of avoiding the enemy's daylight search area until after dark in order to achieve surprise and to be at a convenient distance from the enemy's probable flying off position. This was reached in the early hours of 1 April. Nothing was sighted, however, although A.S.V. searches had been carried out by Fleet aircraft and so they withdrew outside the enemy's search area.

18. Similar movements but in different areas to the sweep of the previous night were carried out during the night of 1/2 April, again without success. By the morning of 2 April the Fleet had been at sea for three days and two nights off the south coast of Ceylon, and the probability of its detection by enemy submarines was increasing. Moreover, no further information had been received of a possible air attack on Ceylon. It seemed that the Japanese timing might have been upset, or they might have been aware of the Fleet concentration and waiting until it had to return to port for refuelling; or again, the British deductions might have been wrong from the start.

19. On the strength of these considerations, the Naval Commander-in-Chief, Admiral Sir James Somerville, decided to carry out a smaller sweep, rather more to the eastward than on the previous two nights, and if nothing was sighted to abandon the operation. Once again the sweep was fruitless and in the evening of 2 April 1942, the Fleet set course for the island base of Addu Atoll. Two cruisers, the Dorsetshire and Cornwall were despatched to Colombo, the former to complete her refit and the latter to escort a convoy. The aircraft carrier Hermes and the destroyer Vampire were sent to Trincomalee to prepare for operations off Madagascar. These movements were to affect the course of subsequent events.

20. The main body of the Fleet arrived at Addu Atoll at 1200 hours on 4 April. An hour later a Catalina on patrol sighted large enemy forces about 360 miles from Ceylon. This information caught the Fleet on the wrong foot as the Fleet could not be made ready for sea again immediately owing to the shortage of refuellers at Addu Atoll.



A.H.B.I. MAP No. 307

21. According to the Admiralty, the defence of the Indian Ocean and its vital lines of communication, depended upon the existence of the Eastern Fleet and the Admiralty had approved the policy of keeping the Fleet "in being" as one of paramount importance. The only hope of dealing the enemy an effective blow was by means of a carrier borne striking force by night.

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22. The Eastern Fleet was divided into two sections, Force "A" comprising the aircraft carriers and the one modern battleship, and Force "B" the battle squadron comprising the obsolescent battleships. On arrival at Addu Atoll Force "A" began refuelling immediately and was ready for sea before Force "B". But to operate the carriers would mean that they would have to be despatched with only one battleship as escort and this would have entailed grave risks of meeting the enemy fleet and offering them a grand chance of crippling the carriers, the Royal Navy's only offensive weapon.

23. Interception of the enemy force before or during 5 April was not possible but the chances were that shore based aircraft might be able to cripple some enemy ships which could be destroyed by the Eastern Fleet later. And so Admiral Somerville decided to sail as soon as possible with Force "A" during the night of 4/5 April and that the remainder of the Fleet should sail when ready for sea.

24. On putting to sea Force "A" endeavoured to ascertain the location and movements of the enemy task force but this was made difficult by the many and conflicting reports received. It appeared that the enemy fleet had set course for Addu Atoll, at least they were sailing in that direction, with the presumed intention of engaging the Eastern Fleet. Keeping to his policy of avoiding superior enemy forces by day and attacking them by night, Admiral Somerville decided to steer to the east in order to gain a position from which to launch an attack during the possible return of the enemy force from Addu Atoll. On 6 April a signal was received from Ceylon to the effect that a strong Japanese force was somewhere between Ceylon and Addu Atoll. All round air searches failed to locate the enemy and since the enemy submarines were suspected of covering the approaches to Addu Atoll, the Fleet passed to the west of the Maldive Islands in order to make an unexpected approach from the west. Air searches continued but with negative results and the Fleet reached Addu Atoll without incident at midday on 8 April.

25. The experiences of the past few days left no doubt in the mind of the Commander-in-Chief, Eastern Fleet, that it was undesirable to undertake further operations in the waters around Ceylon for the time being. The enemy had complete control of the Bay of Bengal and at his selected moment could obtain local command of the waters south and south-west of Ceylon. The battlefleet, slow, outgunned and of short endurance was only a liability in the Ceylon area under these conditions and the carrier borne protection would have been of little value against repeated attacks on a scale experienced by naval units in their encounters with the enemy, about which more will be said later. There was little security against air or surface attacks at the naval bases in Ceylon and none at all at Addu Atoll. Admiral Somerville therefore decided to send the battle squadron to East Africa where it could be of some use in protecting sea communications, and for the carriers with their escorts to Bombay whence they could continue to operate in the Indian Ocean primarily with the object of deterring the Japanese Fleet from attacking sea communications in this area with light forces. This section of the Eastern Fleet steered clear of Ceylon for the time being, a policy which was endorsed by the Admiralty.

The Attack on Colombo

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26. While the Eastern Fleet had been cruising around the Indian Ocean in a futile attempt to locate the enemy task force, Ceylon itself was being subjected to heavy air attack.

27. In the evening of 4 April 1942, a Catalina flying boat reported a large enemy force some 360 miles from Ceylon approaching the Island from the south-east. But before details of the composition of the enemy force could be transmitted the Catalina was silenced, presumably by enemy aircraft since it did not return to base. Other Catalinas, one of which failed to return, were despatched and elements of the enemy force were shadowed during the night until early morning when adverse weather conditions rendered further observation impossible.

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28. Little doubt now existed that a heavy air attack would have to be faced on the morning of 5 April. The Eastern Fleet was 600 miles away, short of water and fuel, and could not possibly interfere. At Colombo the Commander-in-Chief, East Indies Station gave orders for the immediate dispersal of shipping and nearly all seaworthy vessels sailed westwards and northwards. This left some twenty-one merchant and thirteen naval vessels in harbour, most of which were unfit for sea owing to defects. The Dorsetshire and Cornwall which had reached Colombo on the morning of 4 April were ordered to sail for Addu Atoll some 12 hours later to rejoin the Eastern Fleet, an order which resulted in the loss of both ships at the hands of enemy aircraft.

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29. Catalina aircraft re-established contact with the enemy task force at 0700 hours on 5 April, when a force of one battleship and two cruisers was sighted and reported. A few minutes later another Catalina reported that it was being attacked by enemy aircraft in a position some eighty-five miles east of the reported position of the first Catalina. It was subsequently learnt that the second message was incorrect and that it had been transmitted by the wireless operator in error, a mistake which had unfortunate consequences. At 0720 hours the first Catalina sent out another message to the effect that the complete force had not been sighted. An hour later another message was received which reported the force as two battleships, two cruisers and a number of destroyers.

30. It seems highly probable that the enemy carriers were not sighted at all, except perhaps by the flying boat which was shot down on 4 April. It is possible that the battleships with their escorts left the main force during the hours of darkness and that the carriers were somewhat to the west and north when the aircraft were flown off to attack Colombo. This was not ascertained until later, however, and the A.O.C., Ceylon quite naturally assumed that the carriers were in the vicinity of the Catalina which had transmitted the erroneous message. The Blenheim striking force despatched to attack the enemy carriers was therefore routed well to the east of the carriers and no contact was made.

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31. The air attack on Colombo began at 0740 hours on Easter Sunday 5 April 1942 and lasted about an hour. The Blenheim squadron, which could not take off until the raid was over, was fortunately located at the Racecourse airfield and the enemy, not knowing of its existence, confined their airfield attacks to Ratmalana. Had Japanese intelligence been more adequate it is likely that the Blenheims would have been destroyed.

32. One of the Blenheims was detailed to take off and follow enemy aircraft back to their carriers but it went unserviceable at the crucial moment and the task was given to a Catalina. Though contact with enemy aircraft was made off the coast of Ceylon, they were subsequently lost owing to the superior speed of the Japanese aircraft. The force of ten Blenheims which took off at 0900 hours had therefore to rely upon conclusions drawn from the Catalina reports and, as already stated, assumptions were incorrect. After an uneventful flight of three hours and forty minutes over the sea, the formation returned without catching even a glimpse of the enemy force. Limited endurance of Blenheim aircraft, did of course, prevent extensive searches being carried out.

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33. The aircrews of No. 11 (Blenheim) Squadron had had practically no operational experience over the sea but had carried out some navigational exercises since arriving in Ceylon in March 1942. The navigator of the leading aircraft had done over 700 hours in the air, mostly over land. But lack of experience or training was not the primary cause of their failure to find the enemy fleet. The real reason for the abortive strike was that the Squadron was sent to an area in which there were in fact no enemy warships. The mistake was the result of an S.O.S. message sent in error by one of the Catalinas on reconnaissance. Owing to a misunderstanding the wireless operator sent, as if in original, a message to the effect that his aircraft was being attacked by enemy aircraft, instead of a re-transmission of a signal picked up from another Catalina which was actually engaged by the enemy. Some reports of this operation give bad weather as the reason for the failure of the Blenheims. But this was not so, the weather was fair over the whole area with 1/10th cloud and visibility fifteen to twenty miles.

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34. The radar system was still in process of installation at Colombo and no information regarding the approach of enemy aircraft was therefore received until they were actually sighted. It was fortunate, therefore, that the early warning given to the defences by Catalina patrols enabled everyone to be on their toes. Hurricane pilots were actually in their cockpits when the enemy aircraft were sighted.

Ibid

35. The first wave of enemy aircraft selected Colombo harbour for attack. Installations and shipping were bombed by flights of enemy aircraft, most of which machine-gunned their targets after their bombs had been dropped between 1,000 to 200 feet. During the bombing the fighter escort remained overhead acting as top cover and they dived on to the intercepting Hurricanes as the latter came in at lower heights to attack the bombers. The weather at the time was 8/10 to 10/10 cloud with a base at 2,000 feet. Heavy tropical rain was falling and gusts of wind, usual during brief tropical storms, prevailed. The enemy made full use of these conditions. A large black cloud about 5,000 feet thick covered the harbour area and the enemy bombers, after obtaining a general view of their targets through these shafts, made shallow dives through the cloud and, on coming out at about 2,000 feet, immediately increased their angle of dive on to the targets selected.

36. While the attack on the harbour was in progress approximately forty enemy aircraft attacked Ratmalana airfield and the nearby railway workshops. The force was made up of Navy Zero fighters and Navy Type 99 bombers, probably in a ratio of two to one. They approached the target area between 3-5,000 feet and carried out strafing, dive-bombing and low

level bombing. Here again the fighters stayed aloft except for those which took part in the machine-gun attacks. Full use was made of the available cloud cover.

37. A high level bombing raid was made on Colombo harbour by about forty-eight enemy aircraft soon after the first attack had ended. The bombers were said to have been twin-engined types and they dropped their bombs on harbour workshops and on shipping in the harbour. This wave was not intercepted by our fighters and weather conditions prevented the ground defences from identifying them.

38. It was indeed fortunate that prior warning of the raids had been received since the dispersal of shipping undoubtedly kept shipping losses down to a minimum. But two naval vessels were sunk and one damaged and one merchant ship was set on fire without, however, becoming a total loss. Serious damage was caused to the harbour workshops and some railway sheds were slightly damaged. The raid on Ratmalana airfield was less successful from the enemy point of view, the damage sustained there being very light, mainly because all British aircraft were either dispersed or airborne when the attack developed.

39. Thirty-six Hurricanes of Nos. 30 and 258 Squadrons and six Fulmars of the Fleet Air Arm were scrambled to intercept the raids but they were at a disadvantage from the start. The absence of warning meant that fighters had to forgo the advantages of height and they were attacked by enemy aircraft immediately after taking off. Moreover, it was impossible to work to any co-ordinated plan and the fighting developed into a series of low altitude dog-fights. Air battles indicated, however, that the Hurricane II when well handled was superior in some respects to the enemy Zeros. The shooting of some enemy pilots was extremely bad, particularly in deflection shots. The enemy's biggest advantage was in manoeuvreability and there were cases of the Japanese Type 99 bomber engaging our Hurricanes in dog-fights.

40. During the battles British air losses amounted to two Catalinas lost while on reconnaissance, fifteen Hurricanes shot down, (five pilots were saved), four Fulmars and six Swordfish of the F.A.A. destroyed. The Swordfish unfortunately became mixed up in a general melee while on their way from China Bay to Ratmalana in anticipation of a strike and were all shot down while carrying torpedoes. R.A.F. Hurricanes claimed eighteen enemy aircraft destroyed, seven probably so and a further nine as damaged. The Fleet Air Arm claimed one enemy aircraft destroyed and the anti-aircraft defences five.

41. Generally speaking, the raid was carried out in a methodical and efficient manner, though the "relentlessness" and "fearlessness" reported by naval ships attacked was absent, probably owing to the presence of our own fighters. The lack of concentration in the dive, possibly due to a combination of watch for and evasion of fighter attack, resulted in some really bad bombing against ships just outside Colombo harbour, which were heavily bombed without sustaining damage.

42. The Colombo raid provided the first test for the civilian population and civil defence services. The latter worked well and there was no evidence of panic among the population. After the raid, however, there was a considerable evacuation from Colombo by both road and rail to India and the hill country of Ceylon, the latter causing serious congestion of

traffic on all main roads and a shortage of labour for all essential services.

Loss of Dorsetshire and Cornwall

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43. These two cruisers which sailed from Colombo late on 4 April to join the Fleet at Addu Atoll were subsequently instructed to rendezvous with Admiral Somerville on the afternoon of 5 April. Early on that morning enemy reconnaissance aircraft spotted the two ships.

44. Soon after noon on 5 April, three aircraft were sighted by the Dorsetshire and assuming them to be hostile opened fire on them. Almost immediately, enemy aircraft dived on to the Cornwall which was a mile away from the Dorsetshire, and released their bombs at a low altitude, one bomb scoring a direct hit and another a near miss. Simultaneously, a separate formation of three aircraft attacked the Dorsetshire and although avoiding action was taken at a speed of 27 knots, all three bombs scored hits which among other damage disabled the steering gear. Attacks by successive formations of three aircraft followed at short intervals. The ship took a terrific pounding and four minutes after the initial attack there was a decided list to port. All communications between the bridge and other parts of the ship had gone and the whole vessel was enveloped in flame and smoke. At least four more direct hits were received, making a total of ten in all, and there were many near misses. As the ship turned slowly on its beam ends the Captain gave the order to abandon ship. He afterwards said "It was incredible how quickly the ship sank, she just took one plunge by the stern and we were thrown into the water, the bows towering vertically above us us .....".

45. Meanwhile the Cornwall though still afloat had not fared much better. Following the initial attacks, bombs fell almost continuously some scoring direct hits but the majority very near misses. According to the Captain the cause of the sinking in such a short time was not so much due to the direct hits as to the near misses which caused serious underwater damage. "... the effect of these near misses" said the Captain "was very great indeed, lifting the ship bodily by their force, causing her to whip heavily from end to end". The Cornwall sank soon after the Dorsetshire. There appears to be some doubt as to the actual number of enemy aircraft attacking the ships. One Captain gave thirty-six plus and the other fifty plus, the former figure probably being the more accurate.

46. Once again Japanese airmen had been successful. Their dive-bombing attacks against the Dorsetshire and Cornwall were just as effective as the torpedo and high level bombing attack used against the Prince of Wales and Repulse. The enemy used single engined, two seater aircraft, probably the Navy Type 97 reconnaissance bomber. Their tactics, diving steeply at an angle of from 60° to 80°, were facilitated by the ships being on a southerly course, which enabled the aircraft to combine the advantages of attacking down sun and from ahead, the cruisers' blind spot for A.A. defences. The attacks were well pressed home, the height of release being estimated at 1,000 to 500 feet. The bombing must have been incredibly accurate since one cruiser estimated that 90% of the bombs dropped scored direct hits or near misses.

Attacks on Merchant Shipping

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47. While the foregoing events were taking place in the Ceylon - Addu Atoll area, another Japanese force (or perhaps a detachment of the main force off Ceylon), which was believed

to consist of one or more capital ships, two or three carriers with cruiser and destroyer escorts, was operating against merchant shipping in the Bay of Bengal. Shipping at this time was sailing off the east coast of India in small unescorted groups, routed as close in shore as possible. There was no air striking force in southern India and no fighter aircraft. In fact there were no aircraft at all in this area except a few twelve year old Valentias manned by the Indian Air Force Volunteer Reserve.

48. Ranging at will the Japanese between 5 and 9 April accounted for fifteen merchant ships by air attack while another eight were sunk by surface craft, a total of 112,000 tons gross. On 6 April, following reconnaissance flights by Japanese carrier borne aircraft and float-planes, Vizagapatam and Coconada were attacked, the first bombs on Indian soil. These raids were comparatively light and little damage was caused, but there was some evacuation of the cities on the east coast.

49. Commencing on 2 April, merchant shipping off the west coast of India was subjected to submarine attack. Operating from the north-west of Bombay to east of Addu Atoll, enemy submarines sank five merchant ships totalling some 30,000 gross tons.

The Attack on Trincomalee

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50. Early on 9 April 1942 the Naval base at Trincomalee was heavily attacked by Japanese aircraft, presumably from the same task force that attacked Colombo a few days earlier. It seems likely, however, that the force which operated off Colombo was joined by those elements hitherto foraging in the Bay of Bengal. The attack on Trincomalee was expected and Catalina patrols were therefore maintained. In the late afternoon of 8 April an R.A.F. flying boat reported three battleships and one aircraft carrier 400 miles due east of Ceylon steering a course north-west.

51. Another Catalina was airborne in the early hours of 9 April and carried out a cross over patrol approximately 200 miles east of Trincomalee. Soon after dawn the enemy was again located but the Catalina which began to signal the enemy's position and composition broke off transmission before anything more than "A large force....." could be sent. Nothing more was heard from the Catalina and it did not return to base.

52. It was evident that a dawn attack would be made on either Trincomalee or Madras. The evasive tactics employed at Colombo had proved effective and since there were too few fighter aircraft at Trincomalee, orders were given for the harbour to be cleared. The enemy had made no attempt to locate dispersed shipping at Colombo and it seemed unlikely that they would do so at Trincomalee. On the evening of 8 April most of the ships at Trincomalee, including the aircraft carrier Hermes sailed with orders to keep close in shore and to be at least forty miles away by first light on 9 April.

53. Unlike Colombo the radar screen was in operation and at 0700 hours plots were recorded at a range of ninety one miles. A positive track was established when the raiders were between thirty-five to forty miles away. The attack commenced some 20 minutes later, the principal targets being China Bay airfield, the harbour and docks.

54. When the enemy force was first sighted the bombers were flying at 15,000 feet, about sixty in number, escorted by Zeros some of which weaved between the bombers while others remained aloft

at 20,000 feet as top cover. As they neared the target area the first wave of Navy Type 99 dive-bombers lost height and carried out a level bombing attack from about 10,000 feet. Then followed further formations of bombers which broke formation to dive-bomb and machine-gun their targets. Almost immediately a high level bombing attack by twin-engined enemy aircraft took place.

55. No bombs were dropped on Trincomalee town itself but considerable damage was done at the airfield. Thirteen Fleet Air Arm aircraft, most of them in various stages of erection or repair, were destroyed. The dockyard received major damage from several direct hits, several workshops and many godowns were wrecked, power and water mains cut and cranes put out of action. Two ships were damaged in harbour. But civilian casualties were exceptionally light.

56. A dawn patrol of three Hurricanes, orbiting China Bay airfield at 15,000 feet was vectored to meet the raiders which were sighted thirty miles from the coast. At the same time two further sections were scrambled from China Bay and two more from the neighbouring satellite airfield of Kokkilai, the last two climbing rapidly to 16,000 feet. In all, seventeen Hurricanes of No. 261 Squadron and six Fulmars of No. 273 Squadron were airborne, and this represented the total number of serviceable British aircraft available.

57. The action soon developed into a dog-fight but the early warning had enabled some Hurricanes to gain the advantage of height and to adopt the dive and zoom tactics calculated to be the best method of countering the manoeuvreability of enemy aircraft. Our fighters were hopelessly outnumbered, however, and we lost eight Hurricanes and three Fulmars in claiming fifteen enemy aircraft destroyed, seventeen probably so and five damaged. The A.A. defences claimed the destruction of nine enemy aircraft.

58. The supreme advantage of radar cover can be seen in contrast to the Colombo attack. At Trincomalee there were about half the number of fighters available and yet the early warning enabled them to inflict a far higher percentage of losses in proportion to the number of R.A.F. fighters in action. In fact, the Japanese published reports, as far as they go, confirmed their losses higher at Trincomalee than at Colombo.

59. The signal received from the Catalina on patrol (Para. 51) enabled the Air Staff to estimate the position of the enemy, accurately this time, and nine Blenheims of No. 11 Squadron were despatched to attack the enemy carriers. The enemy force was said to have comprised three battleships, four or five carriers, four or five cruisers screened by a number of destroyers. The Blenheims made a bombing attack from 11,000 feet but it was not very accurate since only three near misses were observed and these about fifty yards from the targets. After bombing the formation turned for home and commenced a shallow dive with the object of descending to sea level. They were intercepted by Zeros at 7,000 feet and of the nine Blenheims which set off only four returned and all these were damaged. They had the satisfaction, however, of seeing four enemy fighters go down in flames. One report says that stiff opposition was met by the Blenheims during the bombing and this might account for the inaccurate bombing.

60. While the raid on Trincomalee was in progress, two enemy reconnaissance aircraft appeared over Colombo. They were engaged by A.A. fire and left without dropping any bombs.

This had a most unfortunate sequel, however, as the return flight of the enemy aircraft took them within sight of the aircraft carrier Hermes and the shipping which had been dispersed off the east coast of Ceylon.

Loss of Hermes and Others

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61. The Hermes (less her aircraft which had been transferred ashore) in company with the destroyer Vampire, sailed from Trincomalee during the night 8/9 April and proceeded south in accordance with dispersal orders. At the time of the air attack on Trincomalee these ships were sixty-five miles away and about five miles off the coast of Ceylon. During the morning they turned north with the intention of reaching Trincomalee during the late afternoon. Some seven miles from the Hermes there was a British merchantman Athelstane and a corvette Hollyhock. Another merchant vessel British Sergeant was also in the vicinity.

62. A Japanese aircraft report was intercepted at Colombo and when interpreted it turned out to be a sighting report of the Hermes. The carrier was ordered to make full speed for Trincomalee in order to reach fighter cover. Fighters from Ratmalana were sent to her assistance too. But owing to a breakdown in communications between Colombo and Trincomalee some confusion arose. The Commander-in-Chief, East Indies Station was at Colombo and could not pass on the information that the Hermes had been sighted. Trincomalee could not pass information regarding the attack on the port and Naval Headquarters Ceylon remained unaware of its full weight. They imagined that only one carrier was included in the enemy force. Since the Hermes was about 180 miles from the estimated position of the enemy fleet it was hoped that she would have time to reach the fighter umbrella at Trincomalee before the Japanese aircraft had time to refuel, rearm and attack her. Actually four or five carriers were operating and subsequently the C-in-C. formed the opinion that the enemy had a complete striking force ready in reserve.

63. Orders were issued from Colombo for Trincomalee to despatch whatever fighter cover was available, and for Ratmalana to send seven Fulmars to patrol over the carrier. But the Fulmars were too late and there was no communication with Trincomalee. This was fatal since the Hurricanes at China Bay though only sixty miles from the Hermes were blissfully unaware of the peril. Thus for a second time in a week, surface craft had to rely on their A.A. armament to oppose an overwhelming dive-bombing attack, with the inevitable result.

64. On receipt of the Commander-in-Chief's orders the Hermes increased her speed to the maximum of 24 knots. During the morning of 9 April when off Batticaloa, enemy aircraft were sighted coming out of the sun at about 10,000 feet. They immediately attacked, diving at an angle of 65° on to the carrier which opened up with every gun it could bear when they came within range. The attack was carried out perfectly, relentlessly and quite fearlessly and was described by one eye witness as being like a highly organised deck display. The enemy peeled off in threes and dived straight down on the doomed ship out of the sun. Hits were scored at once and during the following ten minutes enemy aircraft attacked in a continuous procession. The ship was soon in a bad way, listing heavily to port. The end came quickly and twenty minutes after the first sighting of the enemy the Hermes took her final plunge.

65. As soon as the carrier had disappeared the enemy turned their attention to the destroyer Vampire which was attacked by about fifteen bombers. Ten minutes sufficed to finish her. The ship broke in half and sank rapidly. During the brief encounter the destroyers guns shot down one enemy aircraft, probably destroyed another and damaged a third.

66. While the Hermes and Vampire were being destroyed, six enemy bombers attacked the British merchantman British Sergeant some twelve miles to the north. She received four direct hits and two near misses in about 90 seconds and was left in a sinking condition. About an hour later, enemy aircraft bombed the corvette Hollyhock and the merchant vessel Athelstane both of which were sunk in the space of a few minutes. As the Athelstane sank, some Fulmars which had been sent from Ratmalana to patrol over the Hermes appeared on the scene. They immediately engaged the enemy shooting down at least three and losing two of their number in doing so.

67. These actions marked the close of the Japanese offensive in Indian waters. That afternoon, 9 April 1942, three carriers, nine large vessels accompanied by destroyers were sighted 170 miles east of Trincomalee steering a southerly course; this was the last seen of them in the waters around Ceylon.

Summary

68. The immediate consequences of the operations just described was curious. Both fleets withdrew from the waters which had been the scene of so much activity. The British fleet to East Africa and the Japanese east of the Straits of Malacca. Apart from occasional submarine attacks on shipping, there was never to be any recurrence of activity. The threat of the renascent power of the United States in the Pacific, or other considerations, caused the Japanese to concentrate their efforts on the Pacific islands, and with the growing weight of British air power, the threat to India and Ceylon gradually receded.

69. Summing up the Commander-in-Chief, Ceylon remarked that the object of the Japanese operations was purely a raid on the harbours and airfields of Ceylon, combined with attacks on shipping in the area. General Wavell, however, considered that the enemy's object was to secure the rejection by India of the proposals brought out by the Cripps mission, then negotiating in Delhi.

70. The composition of the enemy force remained uncertain but it seems likely that three battleships and five carriers were operating, with at least two cruisers and six destroyers plus a number of submarines. In the course of the operations we lost two large cruisers, one small aircraft carrier, two destroyers, one corvette and twenty-nine merchant vessels of varying sizes from 1,000 to 9,000 tons. In aircraft too, our losses were high and especially serious in the absence of reserves. Had the attack been renewed it would have been difficult to meet. After the raids the air strength of Ceylon was reduced for a time to twenty-one Hurricanes, three Blenheims and sixteen Swordfish.

71. On the other side of the picture it is certain that enemy losses were high in proportion to their strength, perhaps as high as 30 per cent. There is no evidence to show, however, that the enemy thought his losses excessive since their experiences on this occasion did not deter them from staging

a similar attack on Midway Island some two months later, when Japanese carriers were badly mauled by carrier borne American aircraft.

72. As a naval operation the Japanese raids on Ceylon must be regarded as highly successful from their point of view. We were not strong enough in the air to counter the raid. The lack of fighter aircraft and of an efficient early warning system prevented the R.A.F. from inflicting really crippling casualties on the enemy. Moreover, we lacked sufficient striking power, both shore based and carrier borne, and as a result the enemy escaped unscathed.

73. The Japanese attack revealed the weakness of the Eastern Fleet and induced the latter to withdraw from the Ceylon area without the necessity of engaging that fleet in battle. Although the Japanese did not follow up with further attacks on Ceylon, it enabled them to disregard the Eastern Fleet for the time being. The information they gained appears to have convinced them that the Ceylon area itself was not sufficiently fruitful to warrant attacks on shipping there. It would have been a different story if information of their approach had not allowed the dispersal of shipping.

SECRET

SECTION V

EXPANSION AND DEVELOPMENT OF INDIA COMMAND

Background

1. The build-up of India Command was largely conditioned by the war situation in other theatres. The operations to capture Madagascar, for instance, delayed the arrival of reinforcements and equipment, principally those of the Navy and Army, but had removed the potential threat to India's line of communication with the United Kingdom. The reverse suffered in the Western Desert in June, 1942 and the close approach of Rommel's army to the Nile delta also caused a diversion of units and equipment, especially in aircraft and tanks, to the Middle East Command. Though India was far from secure, the danger to Egypt was obviously far more threatening and in any case, the monsoon which had started in India had given the armed forces there a breathing space in which to re-organise and train. Towards the end of June, 1942 General Wavell cabled the Commander-in-Chief, Middle East offering any assistance that India could afford. An anti-tank regiment was asked for, which was sent, together with a hundred tank carriers and other aid.

Despatch by F.M.Wavell Mar.-Dec. '42 Supp. to London Gaz.

2. A danger more nearly affecting India arose from the German advance towards the Caucasus, which menaced Iran, Iraq and the Persian Gulf. A large proportion of the garrisons in those countries had been moved across to Egypt to meet the threat to the Nile delta and it seemed that the only way to reinforce Persia in time to halt the German advance through the Caucasus, should the Russians fail to hold them as at one time seemed likely, was to send troops from India, weak though her defences were. In September, 1942 an armoured brigade and a division left India for Iraq and a further division was held in readiness should the situation demand further reinforcement.

3. Internally, other factors hindered expansion and development in India. The summer of 1942 was the hottest experienced in Bengal for many years and the fact that numbers of natives died from heat exhaustion illustrates the effect the climate must have had upon the unacclimatised British personnel who reached the Bengal area direct from temperate latitudes.

4. The transportation problem too was a difficult one and further complicated by the heavy monsoon of 1942 which caused extensive flooding and interruption of railway communications north of the Brahmaputra and elsewhere. The road from Dimapur to Imphal suffered continual landslides, a particularly serious matter since the road constituted the sole land line of communication for a large part of the force on the India-Burma frontier. This was followed by the worst malaria epidemic India had known for many years. There was a particularly high incidence among lorry drivers and other transport personnel which had the cumulative effect of worsening the situation. Finally, from August, 1942 onwards, the rebellion organised by the Indian Congress after the breakdown of the Cripps negotiations in April was directed especially against communications to North-East India.

5. Sea communications into Calcutta were also affected. The Japanese naval raids in April caused for some time the virtual closing of the Bay of Bengal to merchant shipping and this placed additional commitments on the already over-worked railways. The port of Chittagong was closed altogether and much of the port equipment was removed in May, 1942 when a Japanese attack on Chittagong seemed probable.

6. The communications difficulties mentioned above naturally had a considerable effect upon the efficiency of the troops. Those in Manipur, who were dependent upon the Dimapur-Imphal road for supplies, had to subsist on less than full rations for a considerable part of the summer, the resultant malnutrition increasing their susceptibility to disease. It was also impossible, owing to the breaking of the road, to provide satisfactory medical accommodation and equipment or to evacuate the sick to better conditions. This again increased the sick rate. Many of the troops had been through the exhausting Burma campaign and should have been relieved and rested had the reliefs or transport facilities been available. But a sufficiency of transport aircraft which could have eased the situation was not yet available. In October and November, 1942, however, when conditions began to improve, some 20,000 sick were evacuated from the Eastern Army area in addition to the 15,000 or so evacuated before the rains when the Army came out of Burma.

7. The disturbances caused by the Indian Congress in August, 1942 threw an additional strain on the Army, which had to be used for internal security duties instead of its legitimate work of training and equipping for operations in the dry-weather season. The equivalent of fifty-eight battalions had to be employed; of these twenty-four belonged to the field army and the equivalent of seven formed from reinforcement camps and training centres. The remainder were battalions already allotted for internal security. The R.A.F. too, had to divert some of its effort to the maintenance of internal security patrols.

8. Thus many difficulties and delays occurred in the reinforcement of the Eastern frontier of India where units were already seriously below strength owing to the high incidence of disease. Had the enemy elected to attack Bengal at this time it seems likely that these factors and possible sabotage could have turned the scales against us.

R.A.F. Organisation

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9. The expansion of the air forces in India and three factors, operations, training and maintenance led to the necessity of a general reorganisation of the Command. In March, 1942 there were but two groups headquarters in India, No. 1 (Indian) Group at Peshawar controlling air operations on the North-West Frontier, and No. 222 Group at Colombo reponsible for the control of R.A.F. units in Ceylon and at the island bases of the Indian Ocean. In addition there existed a nucleus of No. 2 (Indian) Group at Lahore which had been formed with the intention of undertaking the training of air force personnel in India, a scheme which did not reach maturity.

10. During the second quarter of 1942 the group organisation was extended to the scale of seven headquarters. On 12 March remnants of the original 221 Group of Rangoon reformed the Headquarters at Calcutta and on 1 April No. 224 Group cane into being, unofficially it seems since no authority for its formation had then been received from the Air Ministry. No. 221 Group was made responsible for all bomber and general reconnaissance operations on the Burma front and over the Bay of Bengal and No. 224 Group for all fighter operations in Bengal and Assam.

11. In Ceylon No. 222 Group retained its former function. In the North-West No. 1 (Indian) Group became No. 223 Group on 1 May and continued to fulfil the same role. No. 2 (Indian) Group was disbanded and in its place there arose

No. 227 (Training) Group with Headquarters at Lahore. In the south No. 225 Group formed at Bangalore on 22 April as a composite Headquarters vested with the charge of air force units in the enormous land area ranging from Cape Camorin in the south to Sind and Orissa in the north-west and north-east respectively. It was probably the largest land area covered by any group in the world and for a time possessed fewer aircraft than any other. To complete the group organisation, No. 226 (Maintenance) Group formed on 9 May at Karachi, the principal port and air terminal through which reinforcement aircraft for India Command were to flow.

12. Early in the expansion period it became evident that the control of operational groups in North East India from New Delhi was impossible and might jeopardise the success of operations should they become heavy or sustained, both offensive and defensive. The distance from New Delhi to Calcutta is over 850 miles or farther than from London to Munich and just about as difficult to contact on the telephone in the year 1942. In order to overcome this problem it was decided that a new command within the Command, as it were, would have to be formed, the justification for this unusual arrangement being once again, the tremendous distances and poor communications in India. The direct control of the two operational groups in Bengal was therefore taken over by a new Headquarters called Bengal Command, located at Barrackpore, a suburb of Calcutta, to act as the A.O.C.-in-C's advanced H.Q. in the field. Another important consideration in the formation of this new Command was the necessity for an air officer of sufficient rank to deal on equal terms with the Navy, the Army and the Provincial Government in the Bengal area.

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Aug. 1943
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13. But before 1942 had run its course, further reorganisation was effected. In making No. 221 Group and No. 224 Group responsible for bomber and fighter operations respectively, the area in which their units were dispersed was so large that with the difficulties of communication by land-line, road, rail and sea, adequate control and maintenance was virtually impossible. Moreover, the offensive operations due to take place in Arakan in December, 1942 made it necessary for a group headquarters to be located farther forward alongside the division which was to engage the enemy. No. 221 and 224 Groups therefore became composite formations, the former at Calcutta controlling bomber, coastal and fighter operations of units based in western Bengal, and the latter moving to Chittagong whence they controlled all offensive and defensive fighter and light bomber squadrons along the entire Burma front from North East Assam to the Mayu Peninsula.

14. Simultaneously with the reorganisation of the operational groups in Bengal, it was decided to copy the Middle East system of mobile wings operating under the operational group headquarters, each wing having its own air stores park and repair and salvage unit. This organisation was brought into being in October, 1942 in the Bengal area and was later extended to other operational groups in India. Ceylon, however, was not included since the area of the Island was so comparatively small that mobility was not of any great importance.

Expansion of Squadrons

15. In March, 1942 the Chiefs of Staff agreed that the squadron target for India Command should be sixty-four plus one transport squadron and a photographic reconnaissance unit. Towards the end of the year this target was increased to a total of eighty-three squadrons as a long term policy, a number judged to be necessary if India and Ceylon were to be

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A.C.M. Peirse

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defended adequately and if sufficient air support was to be provided during the re-conquest of Burma.

16. April, 1942 therefore saw the inception of an all-embracing programme of development of a force which had remained static during a period of rapid advances in other theatres. The immediate reinforcement of Ceylon has already been mentioned(1); in the North-East of India efforts were made, subject to the greater priority of Ceylon's demands, to build up a force with which to maintain air superiority in that area.

17. The minute air force in Burma was virtually annihilated during the retreat and only a few aircraft were flown back to India. The majority of R.A.F. personnel were, however, successfully evacuated and these served to re-form squadrons for the defence of India with aircraft which were gradually arriving from the Middle East and United Kingdom in increasing numbers. Also from the United Kingdom came fresh R.A.F. personnel, many of whom were sent to Bengal to form new squadrons there.

18. Between March and June, 1942 the Air Force in India Command expanded from five(2) to twenty-six(3) squadrons. An additional Mohawk squadron was formed, making a total of two of this type. In April, 1942 three light bomber squadrons came out of Burma and with their re-equipment with Blenheim IVs they formed, for the remainder of the year, the body of the air striking force. During the same month a few Wellingtons arrived and these constituted the advance guard of the night bomber force. The fighter defence of North-East India, hitherto handled by one squadron of Mohawks, was augmented in June, 1942 by three Hurricane squadrons whose personnel and equipment came from the United Kingdom. For photographic reconnaissance tasks, five Mitchells (B-25) were taken over from the Dutch and became the long range element of the P.R. force, while Hurricanes were used for short range work.

19. In March, 1942 the Indian Air Force consisted of four squadrons and the I.A.F.V.R. manned six coastal defence flights. Since the Indian observers did not show the necessary grasp of advanced navigation for general reconnaissance work, it was decided to disband the flights and to concentrate on a programme of ten I.A.F. squadrons made up of five fighter reconnaissance squadrons (Hurricanes), one bomber reconnaissance squadron (Vengeance) and four light bomber squadrons (Vengeance). Only two Vengeance squadrons were, however, formed owing to the difficulty of obtaining sufficient Indian aircrew personnel and the I.A.F. eventually had eight Hurricane squadrons of which five were employed in the fighter reconnaissance role.

20. During the remainder of 1942 other modern aircraft arrived in the Command to reinforce what was still a collection of second-line aircraft. The Vengeance dive-bomber began to arrive in number from America but continual and exasperating teething troubles were experienced and they did not see action until March, 1943. Lockheed Hudsons took up the task of general reconnaissance over the Bay of Bengal in June, 1942 , relieving the I.A.F.V.R. flights. During the

(1) See pages 22-24.

(2) See Order of Battle at Appendix 2 Page 1.

(3) See Order of Battle at Appendix 2 Page 2.

same month No. 217 (Beaufort) Squadron became operational in Ceylon as a torpedo and reconnaissance unit, taking the place of the unsuitable Blenheims which had proved so ineffective for oversea operations. Spitfires made their appearance in India in November, 1942 as photographic reconnaissance aircraft but another year was to elapse before the fighter version operated over the Burma front.

21. R.A.F. heavy bomber Liberators operated for the first time over Burma on 17 November, 1942 but not for some months were they used in quantity because of the lack of spares and ground equipment required for their proper maintenance. The heavy bomber needed a well developed industrial hinterland more than any other type of aircraft and their use in India served to drive home the vital need for local manufacture, a need that had already made itself apparent in the employment of lighter aircraft. Initially the Liberators were a wasting asset since a policy of cannibalization, which no modern air force can follow indefinitely, was forced upon the R.A.F. maintenance organisation. It was not until a complex supply system had been established together with second and third line servicing echelons that the employment of heavy bomber aircraft on the Burma front became a practicable proposition.

22. The general situation at the end of 1942 was that thirty-two squadrons were fully operational on modern types with a further sixteen squadrons in various stages of equipment and training but not operational. In addition there were two flights of transport aircraft and a P.R.U. operational. Aircraft comprising this force were Mohawk and Hurricane fighters, Blenheim and Vengeance light bombers, Army co-operation Lysanders, Wellington and Liberator bombers, G.R. Hudsons and Catalinas, Dakota and Hudson transports, Mitchell and Spitfire and Hurricane P.R. aircraft, totalling in all some 1,443 machines.

Modernisation of the Air forces in India 1939-1944

23. Arriving from the Middle East on 14 January, 1943 a Flight of A.I. Beaufighters took over the task of the night fighter defence of Calcutta, scoring an immediate success (See Section X). The Beaufighters which had the advantage of speed, ceiling and technical equipment over the Hurricanes which had formerly defended Calcutta by night, brought the defence of the City to a standard comparible in quality, if not in quantity, to that of the British Isles. But it must be remembered that the success of the Beaufighters belonged in part to the greatly improved warning system without which the Beaufighters could not have positioned themselves near enough to enemy aircraft to make use of their A.I. radar equipment.

24. Beaufighters in another role appeared in January, 1943 and their advent marked a new era in offensive air operations. Hitherto the Japanese in Burma had been attacked by bombers and short range aircraft. No. 27 Squadron equipped with Beaufighters, carrying a formidable armament, were able to penetrate deep into enemy territory and to attack the Japanese where they were most vulnerable,- in their lines of communication. The fire-power which these Beaufighters brought to bear proved to be the most suitable for such targets as river-craft, rolling stock, locomotives, mechanical transport and the like. From January, 1943 onwards there began a war of attrition which was to have such a decisive effect upon the progress of the war in Burma, but in the early days the effectiveness of intruder operations was limited by the small number of aircraft available. Not until September, 1943 did another squadron of Beaufighters become operational to join in the attack.

25. February, 1943 witnessed an advance in another sphere. The vast areas of ocean extending from the Arabian Sea to the Andaman Islands were patrolled by aircraft based in India and Ceylon and heavy demands were made upon the Catalina squadrons. Nor were these aircraft sufficiently versatile to undertake the many types of over sea reconnaissance demanded of them. The G.R. Liberators of No. 160 Squadron which began to operate in February, 1943 filled the gap and later in the year when photographs were required of the Car Nicobar islands, these aircraft were available to obtain them.

26. For many months the Photographic Reconnaissance Force had to use Mitchell aircraft for all long range work but in August, 1943, Mosquito P.R. aircraft made their appearance. Their range, speed and high operational ceiling fitted them admirably for the task and they considerably extended the area of enemy occupied territory about which it was possible to obtain detailed information.

27. Later marks of Wellingtons also came into the Command in August, 1943. First the Mark III and later the Mark X whose more powerful engines, greater bomb load and better defensive armament was a vast improvement on the Mark I with which India had formerly to be content. A similar advance in heavy bombers was witnessed when in September, 1943, the Liberator Mark III first raided Burma.

28. By June, 1943 the number of squadrons in the Command had grown to fifty-three. Of these thirty-eight were fully operational, comprising seventeen fighter, seven bomber, nine general reconnaissance, one P.R., one transport squadron engaged on supply dropping and three I.A.F. squadrons employed on watch and ward duties on the North West Frontier. During the monsoon when the fair-weather strips in the forward areas had to be evacuated, no fewer than seventeen squadrons were re-equipped with various types of aircraft, seven of them also changing their role. Two other squadrons changed their role without being re-equipped, two squadrons began forming in the Command, three squadrons arrived complete with aircraft from the Mediterranean Air Command and one from the United Kingdom.

29. The two most notable features regarding the re-equipment of squadrons during the monsoon of 1943 were firstly, the conversion of light bomber squadrons because of the shortage of Blenheim aircraft and the availability of a considerable reserve of Hurricanes; secondly, the re-equipment of certain Hurricane squadrons as the Spitfire flow increased. Nos. 11, 34, 42, 60 and 113 (Blenheim) Squadrons were re-equipped with Hurricane aircraft, thereby creating a more suitable and flexible weapon for Army support. The Hurricanes soon illustrated their versatility both as ground-strafers and as fighter-bombers. Nos. 136, 607 and 615 Squadrons changed over from Hurricane II's to Spitfire Vc's in October, 1943 and this was perhaps the greatest single step in the modernisation of the Air Forces in India. The Spitfires soon established a superiority in the air which was never again seriously challenged.

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Despatch by
ACM. Peirse
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30. As a result of the policy of retaining Hurricane IIB's for fighter reconnaissance squadrons, No. 135 and 261 Squadrons which were employed as single engined fighter squadrons, converted to Hurricane IIc's. No. 5 Squadron, R.A.F. which changed over from Mohawks to Hurricane IId's in June, 1943, re-equipped with IIc's during the monsoon as there was an absence of targets in Burma for the IId "tank-buster" (40 mm. canons).

31. No. 4 Squadron I.A.F. converted from the obsolescent aircraft, with which it had been working on the North West Frontier, to Hurricane IIc's its role becoming fighter reconnaissance. At this time it was thought that the expanding I.A.F. was most suited to the fighter reconnaissance role since Indian pilots were adept at remembering what they saw over the battle areas and in reciting their observations to intelligence officers. No. 20 Squadron which had hitherto been engaged on fighter reconnaissance with Lysander aircraft therefore converted to Hurricane IIc aircraft and changed their role to that of offensive fighter.

32. The place in the front line vacated by the Blenheims was taken by the Vengeance squadrons which had been forming and training during the first six months of 1943.

33. The need for offensive aircraft in other theatres limited reinforcement of India Command and the only heavy bomber squadron to form in 1943 was No. 355. This squadron based at Salbani and equipped with Liberators had not, however, seen operational service by November, 1943.

34. Nos. 62 and 353 (Hudson) Squadrons which had been operating in a general reconnaissance role over the Bay of Bengal were transferred to transport duties. But with the threat of enemy sea-borne attacks it was desirable to augment the G.R. force. Very few Liberators for G.R. work reached the Command and those that did were allotted to No. 160 Squadron in an attempt to bring that unit up to full strength in aircraft. No. 354 Squadron was formed, however, from aircraft flown from Dorval, Canada, though it was never possible, during 1943, to allot to it its full number of aircraft. The G.R. force was further augmented when No. 203 (Wellington G.R.) Squadron was flown from the Middle East to Bombay where it became operational during the summer of 1943.

35. The closing months of 1943 saw the end of the era when the Air Forces in India lagged behind other commands. Symbolic of the change was the withdrawal of the last Mohawk fighters. These aircraft had served India well and, as already related, eight of them at one time constituted the only bulwark against Japanese air aggression in North East India. Even then they had been second line aircraft and their continued use, first as fighters and then as fighter-bombers, was a perpetual reminder that India had to be content with second best. Since the Mohawks were not equipped with V.H.F. apparatus they could not be controlled from the ground and in mixing combat as an uncoordinated collection of aircraft instead of a coherent fighting force, they were often more of a liability than an asset. Moreover, their resemblance to Japanese fighters made them prone to be fixed upon by friendly Hurricanes as sometimes happened. With their withdrawal the Air Forces in India became in all its types a first line fighting force.

36. By the middle of November, 1943 there were forty-nine squadrons trained and equipped up to the standard of modern operational requirements. In addition there were twelve squadrons at various stages of training and equipment but not operational, and one transport squadron operating on internal air routes in India.

Development of Air Transport

Modernisation of the Air Forces in India.

37. Poor lines of communication and the vast distances involved led the air forces vigourously to develop the potentialities of air transport. A pitch was reached where the power and mobility of both Army and Air Forces was increased and offensive operations were undertaken with aircraft

as the only source of supply. Of all the factors which contributed towards making India a base for offensive operations, the development of an organisation capable of handling large numbers of transport aircraft and the building up of the squadrons themselves, is one that is outstanding from the air force viewpoint. Moreover, the experience gained in these operations gave the Command a body of experience so implemented by research work that made India Command one of the most well-informed in the use and deployment of airborne forces.

Despatch by ACM. Peirse Jun-Nov. '43 IIJ50/47/3

38. The problems of air transport can be summarised under three headings. Firstly, operations on the India-Burma border demanded a system of air supply to supplement existing means of communication which were totally inadequate. Secondly, the swift movement of mails, important persons and urgent freight throughout India called for a highly developed internal air communications system. Thirdly, the rapid reinforcement of squadrons required airfields and a proper flying control organisation. But owing to operational demands of higher priority these requirements could not be met fast enough to match the urgency with which they were needed.

39. There is no doubt that the lack of transport aircraft delayed progress in India. In August, 1942 the only transport aircraft were those belonging to No. 31 Squadron, equipped with worn out D.C.2 and D.C.3 aircraft, and such of these as could be kept serviceable were required for supply dropping in the forward areas. Actually, air supply had its modest beginnings in May, 1942 when the maintenance of small isolated parties in difficult hill country presented a major problem. Much valuable experience was gained in these early days; what types of stores could be dropped free, what stores had to be dropped by parachute if they were not to be damaged, what ground signals were necessary to enable pilots to identify dropping zones in thick jungle country and the technique of quick loading and dropping.

Modernisation of the Air Forces

40. No. 31 Squadron, though engaged principally on supply dropping in the forward areas, managed to start an air service from Calcutta to Kunming in China on 1 September, 1942 and they also provided aircraft for limited air services. In September, 1942, however, transport Hudsons began to reach the Command and by December it was possible to commence a regular schedule of internal air services, by using the newly formed No. 194 Squadron, helped out by the Group Communications Flights and the small civilian organisations of Indian National Airways and Tata Air Lines. In addition, trunk lines were operated by B.O.A.C. from the United Kingdom through Karachi to Calcutta and later by Quantas Airways between Australia and Ceylon.

41. In September, 1943, No. 194 Squadron was replaced by No. 353 Squadron which had previously been engaged in G.R. work. Another G.R. unit, No. 62 Squadron, was also converted to the transport role and with No. 194 Squadron moved to North West India for re-equipment with Dakota aircraft and airborne training. A further Dakota squadron, No. 117, arrived from the Middle East in November, 1943 and this squadron too was engaged initially on airborne training.

42. Thus in effect, the Command possessed five transport squadrons in November, 1943. Three of them were allotted for airborne training, one was engaged on supply dropping over the Burma front and the other used for the maintenance of internal air services. Although there was never more than one squadron employed on the latter task, route mileage increased from 5,000 per week in December, 1942 to 37,000 per week in November, 1943. This meant, however, that only a

small fraction of requirements in internal air services could be met. In a sub-continent whose railway system was overloaded and liable to breakdowns owing to floods and whose roads were incapable of standing up to heavy traffic, air transport was often the only means of carrying passengers and freight.

43. Meanwhile the need for that close control of training and operations, which only a wing could afford when transport squadrons were fully deployed, was realised. No. 177 (Transport) Wing therefore formed in September, 1943 to control the squadrons allocated for airborne training. It was planned that the Wing should move forward with the squadrons when on completion of training they were deployed in the forward areas.

44. Aircraft reinforcement operations were concentrated under No. 179 (Ferry) Wing. Based at Karachi the Wing performed the vital duty of ferrying aircraft to the units for which they were destined. The complementary duty of controlling the flow of aircraft to and from the various repair and maintenance organisations, aircraft storage units and reserve aircraft pools, also fell within the Wing's province. Opportunity was increasingly taken of utilising reinforcement aircraft for the carriage of passengers and freight whenever possible.

45. In the forward areas air supply was still in its infancy although future planning envisaged the use of transport aircraft in operations on a large scale. But there was some progress and the development achieved can be measured by comparison with an operation in 1941 when the whole of India's resources in transport aircraft were called upon to fly a battalion to Iraq. By the end of 1943, divisions not battalions were the units transported by air. Moreover, transport aircraft could undertake to keep them fully supplied and equipped for offensive action once they had been installed in the battle area. The positive value of this development is shown in a statement made by General Sir George Giffard, G.O.C., Eastern Army, in October, 1943 when he said "It is not untrue to say that without this assistance (airborne supply to outlying garrisons) we could not have held during the monsoon, the positions we held in May last".

Development of Airfields

46. The extent of air force expansion depended entirely upon the number of airfields available. To meet possible commitments in eastern and southern India, a total of some 215 airfields was judged necessary and steps were taken to construct them. This immense programme was given No. 1 Priority in India in March, 1942, and although much work was done, progress was much slower than anticipated.

IIJ50/47/19 Expansion of the Air Forces in India Sept. 1939 to Dec. 1943

47. In many cases the sites chosen by civilian officers were unsuitable and the number of R.A.F. or military personnel who made the final selection of sites, was limited. Road communications to sites was extremely bad and in some cases non-existent. The lack of telephone and telegraphic services prevented the reports of sites being sent rapidly. Moreover, strategic and geological aspects were not always considered jointly. The vast amount of materials required for the construction of the new airfields, the nature of the country over which these materials had to be transported, the initial shortages of mechanical transport combined with the great demands of the railway systems, all created delays and difficulties. Furthermore, the venality of Indian contractors was a factor which greatly hindered progress. Machinery for airfield construction was in short supply and most important of all, there was a serious shortage of skilled engineers with

the experience and drive necessary for this type of constructional work. No R.A.F. Works Directorate existing in India and all construction, both of airfields and domestic accommodation, had to be left to civilian contractors and the Army who co-opted local labour and supplies for the task. On the whole the Army engineers did a magnificent job but their work was made incredibly difficult by the cumbersome administrative organisation controlling them.

IIJ50/47/3 Despatch by ACM. "Peirse Jun.-Nov. 1943

48. Of the 215 airfields envisaged in the expansion programme, some were to be operational and built to the full scale of two runways and accommodation for two squadrons; others were planned as rear airfields with reduced accommodation for two squadrons. By the end of 1942 five operational airfields were complete in all respects and eighty-eight had one all-weather runway of over 1,600 yards ready. In addition sixty fair-weather strips had been completed. The programme also included a certain number of airfields under the control of the Directorate of Civil Aviation, and allowed not only for strategic considerations in the east and north-west but also for training, maintenance, aircraft storage and air transport routes.

49. Mobility was important. Units stationed in Bengal might have been forced to move to southern India or Ceylon at short notice, but their re-deployment would have been impossible without the necessary chain of airfields. This need was anticipated at an early stage of development and the construction of a series of airfields which would allow air resources to be switched from one part of India to another was approved. By November, 1942, potential mobility had been achieved.

50. The lessening danger of invasion from the north-west or east made it possible during the first quarter of 1943 to modify the original programme, thus enabling engineering and constructional resources to be diverted to more urgent projects in the north-east. The policy of satellites for airfields in lay-back areas was abandoned and seventeen airfields, some not sited and others with very little work done on them were also abandoned in the areas west of 88° East. In the same areas it was possible to substitute fair-weather strips for second runways or for both runways, to cancel taxi-tracks, hard standings and buildings on which work had not begun, to reduce dispersal generally and to discontinue the erection of pens. Later in the year a further twelve fair-weather airfields were abandoned in western and central India. The scale of construction and accommodation was limited in the case of a number of incomplete airfields in the southern, western and central areas, so that even though runways and strips were completed, three months notice was to be given before buildings and dispersals were erected. In certain cases projects were limited to the completion of runways and strips.

51. But the increasing scale of offensive operations throughout 1943 necessitated far more construction in the east than was envisaged under the original plan. For operational purposes during the dry weather season a number of fair-weather airfields were prepared in the forward areas with shelter type accommodation and tentage. The decision to conduct operations throughout the monsoon period led to the development of some of these as all-weather airfields with increased accommodation and ancillaries.

52. A number of airfields constructed either under the original plan or at the request of the United States Army Air Force were completed in North East Assam to handle the supply aircraft engaged in carrying supplies to China and on the

supply route from the west for the same purpose. In the same areas certain airfields were developed whence the Americans could operate heavy bombers or defensive fighters. The maintenance and reinforcement of American squadrons in Assam involved further construction in the southern, western and central areas. By the time South East Asia Command in November, 1943, a total of thirty-four all-weather and eleven fair-weather strips had been handed over to the U.S.A.A.F. and facilities were also given to them at some R.A.F. airfields.

53. In March, 1942 there were only sixteen airfields possessing all-weather runways of which only four were operational by modern standards. There were also twenty fair-weather strips. By November, 1943, however, 285 airfields were complete with fifteen others under construction. Of this number 140 were complete in all respects, sixty-four had one all-weather runway ready and a further seventy-one had fair-weather strips.

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54. The difficulties experienced in the execution of this enormous programme, the cost of which was in the neighbourhood of fifty million pounds, were in many cases inevitable. There was a shortage of suitable machinery and supervisory staff and much work carried out by civilian contractors was shoddily or dishonestly performed. In the Punjab and the United Provinces the provincial governments gave great assistance but in eastern India where the need was greatest, there was inefficiency and lack of enterprise. The fact remains, however, that in spite of greed and corruption in internal affairs, the Air Forces in India by November, 1943 possessed sufficient airfields from which to operate their target force in dry weather.

Supply and Maintenance

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55. Faced with an expansion programme of from five to sixty squadrons within a few months with an incredibly long line of communication stretching for thousands of miles either from America or the United Kingdom, the maintenance organisation such as existed in March, 1942 was in no condition to tackle the enormous task. India was not a highly industrialised nation and her immense natural resources were only on the fringe of development. Unskilled civilian labour was almost unlimited but there were few semi-skilled and practically no skilled industrial technicians. The utilisation of the available civilian manpower was thus limited and a very heavy load was thrown upon Service personnel.

56. Geographical factors also complicated the building up of an efficient repair and supply system. The location of the limited industrial facilities largely dictated the location of base repair units, both civilian and Service, and inevitably great distances separated such units from the squadrons they served. Road, rail and water transport throughout India was burdened to a maximum and whereas in a country with good lines of communication a repair may average a month or six weeks, quite frequently this period elapsed in India before a damaged aircraft arrived at its base repair unit. Climatic conditions affected men and material, the former by exhaustion and the latter by corrosion which is shown by the fact that the man hour depreciated some 25 per cent. during the hot weather period and the period of the monsoon. The actual work of the repair units was frequently held up for the lack of spares and tools. The sinking of one of two ships could and did upset the even flow of repaired aircraft. Shortages of spares also led to cannibalisation which though wasteful was inevitable.

57. Before the outbreak of war with Japan, India possessed but one R.A.F. Depot located at Karachi and of its kind it was comparatively well organised. But the inevitable financial difficulties had prevented it from being conceived on a scale that would allow for war expansion although the Air Ministry had pressed for the development of base facilities in India as early as 1940. The R.A.F. Depot had served the peace-time squadrons in the capacity of aircraft erection and storage, airframe, engine and ancillary repair, and as an equipment main supply section incorporating the provision of office for the whole Command. This worked tolerably well while the Air Forces were concentrated in the North West but the enormous distances in India made it impossible for an aircraft depot at Karachi to serve with any degree of efficiency a rapidly expanding air force at the other side of the sub-continent. The functions of the Aircraft Depot had therefore to be decentralised to meet the needs of modern aircraft on operational service.

58. The first step was the inception at Allahabad of a main supply unit in April and May 1942, a unit which eventually became No. 320 Maintenance Unit. This greatly improved floor space available and brought main stocks nearer the area of consumption which had shifted from the north-west to the north-east. Expansion of base repair facilities was undertaken concurrently and the first units drawn into the scheme were the existing workshops at Lahore and Ambala. Local resources were then harnessed and the railway workshops at Kanchrapara, near Calcutta, were taken over and incorporated into a civilian repair organisation. Gradually other firms in the Calcutta area were drawn into the net-work and later the railway workshops at Trichinopoly and the United Provinces workshops at Cawnpore were absorbed too. At Bangalore the Hindustan Aircraft Company had fallen down on its contract scheduled for completion in March, 1942 and no aircraft had been produced by that date. The resources of the Company were therefore utilised to undertake the repair of flying boats.

59. In 1939 the Royal Air Force in India was a garrison body which had perforce to take such aircraft and equipment as could be spared from what were then more pressing commitments. It was fed by an industrial area over 6,000 miles away and its very existence depended upon the maintenance of a vulnerable sea line of communication with Great Britain. The harvest of this policy was reaped in 1941 and 1942 when the air forces nearly starved because of the lack of an industrial hinterland and an organisation close at hand to make them a mobile, closely knit and well supplied force. A condition of maintaining a technical service as a fighting unit is the organisation of a system of repair in depth, the employment of civilian resources and the utilisation of local manufacture.

60. The harnessing of all available industrial resources that occurred in India was the result of necessity and not of foresight. But the lesson had been learned and gradually more and more local industry was mobilised to maintain a striking force whose efficiency depended upon the supply of technical equipment and the manpower to wield it. The fact that if India was to maintain an air force comparable to those in other theatres, a backing of net-work of factories and communications equal to the speed and complexity of modern air warfare, had impressed itself upon those responsible for maintenance in India before the end of 1942.

61. With the successful completion of the Allied landings in North Africa, the shipping situation improved and this coupled with the intensive mobilisation of India's meagre industrial resources was responsible in 1943 for some advance in the employment and maintenance of air force weapons and equipment. The difficulties encountered necessitated an organisation of repair and maintenance in depth for which the base units comprised the R.A.F. maintenance units at Kar Karachi, Ambala, Lahore and Cawnpore, and the civilian maintenance units at Kanchrapara, Trichinopoly, Cawnpore, Barrackpore, Calcutta, Dum Dum and Poona. The civilian units were organised under the Aeronautical Division of the Department of Supply which came into being early in 1943 and developed in October, 1943 into the Directorate General of Aircraft. Under this Directorate the country was divided into five geographical areas and all available civilian manufacture and repair capacity was co-ordinated under regional directors. It was necessary, however, to establish R.A.F. personnel on the civilian M.U's for supervision and guidance.

62. The R.A.F. base repair units carried out third line repairs of a major nature while field repair and maintenance was carried out by maintenance wings which controlled forward repair depots and repair and salvage units. The first unit was No. 186 (Maintenance) Wing which formed at Calcutta in January, 1943, followed in September by two other wings in North West and Southern India. In Ceylon the field maintenance facilities were centralised under No. 222 Group in that Island.

63. The developments already outlined enabled the base repair organisation to serve at the end of 1943 some sixty squadrons and 500 non-operational aircraft. The peak period for repair was in June, 1943 when a total of 314 airframes and 210 engines were repaired, a peak which was the result of a swift expansion of repair capacity and the culmination of a strenuous campaign for spares carried on with the U.S.A. and Great Britain. It proved impossible to sustain this level when the spares position once more deteriorated, owing to shipping problems, and in October, 1943 the figure fell to 130 airframes and 210 engines. Nevertheless the outlook was hopeful since the three civilian maintenance units at Barrackpore, Dum Dum and Poona, and the enormous R.A.F. Depot at Cawnpore had barely commenced production. Throughout the year 1943 the process of irregular expansion did of necessity force on the Command a repair programme which was not only above capacity, but which also fluctuated considerably, resulting in a hand-to-mouth procedure as against planned production.

64. The work of erecting aircraft brought to the Command by sea, steadily increased. During 1943 over 1,700 aircraft were erected, 1,120 of them during the period June to November. Many aircraft were received in a badly corroded state and many engines remained at packing stations and wharves for months without adequate protection. The input of crated aircraft was irregular, owing to shipping difficulties, and when the change-over from the Cape route to the Mediterranean route was effected there was initial dislocation since two consignments despatched at different times arrived simultaneously.

65. The aircraft storage programme fluctuated considerably. At the beginning of 1943 reserves were scarce and the flow through the erection units rapid. During the monsoon of 1943, however, the aircraft storage units began to build up larger buildings. Output for the seven months from December, 1942 to June, 1943 amounted to 650 aircraft while

during the five months July to November, 1943 the output was 810 aircraft. This total did not merely represent normal routine servicing of aircraft held. A large number of modifications had continually to be carried out and many aircraft had to be parked in the open, exposed to such extremes of heat and humidity, that the work involved in some cases was practically doubled. Indicative of the work involved on aircraft was the long procession of trials and modifications necessary to bring the Vengeance up to operational standards. This type was delivered in large quantities from America but was found unsuitable for tropical use. The fuel system was re-designed and over 100 modifications incorporated in the aircraft so that by the end of 1943 it had become the standard light bomber in the Command and could claim the highest seviceability rate of any aircraft in operational use in India.

66. The percentage of aircraft serviceability rose markedly with the improvement of the supply of tools, spares and facilities for squadron maintenance. In June, 1942 it was difficult to keep six aircraft out of sixteen on a squadron serviceable but by the end of 1943 the average serviceability rate had risen to nearly 80 per cent.

Signals Communications and Early Warning

67. The task of providing signals facilities was yet another which had to be started from scratch. Three main types of communication were urgent. Firstly, the provision of wireless aids to navigation; secondly, the establishment of stations for W/T transmission for air-to-ground and point-to-point messages; thirdly, R/T communication to control fighter aircraft engaged in interception duties. Of the latter it may be noted that facilities for ground controlled interception were so meagre that for the first few months after the fall of Burma, enemy aircraft were able to reconnoitre as far west as Calcutta with impunity.

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68. The existing civil facilities were hastily conscripted to aid communication and navigation. They included a medium frequency direction finding (M.F. D/F) service spread thinly over India, of which the two most important stations for operational purposes were those at Chittagong and Calcutta. These, however, were working on an international frequency on which there was no security and thus messages could not be sent unless urgency outweighed security considerations. By September, 1942 six M.F. D/F stations had been constructed and were working in the Bengal area. Three of these constituted the sole air-to-ground organisation for bomber and general reconnaissance aircraft in the eastern area. Main point-to-point W/T stations had also been set up and were working at Calcutta and Asansol, and the majority of occupied airfields were equipped with very low power pack-sets for point-to-point communications. A high speed link from Delhi to the United Kingdom was opened in September, 1942 and was followed in December by a high speed link between Delhi and Calcutta. For land-line communications, the Posts and Telegraphs Department began to develop land-lines which included 10,000 miles in the Bengal area alone which was completed in 1943.

60. Fighter control was effected by making use of the three remaining M.F. D/F. equipment as "Fighter Fixer" stations. The very high frequency equipment which was standard in Britain was still lacking in India and its task of providing ground-to-air communications was undertaken by more primitive means. By December, 1942, however, the Hurricane squadrons operating in the Calcutta area had received V.H.F. equipment and were

thenceforth able to operate as a coherent and well controlled force. The Hurricane squadrons in eastern Bengal received their V.H.F. equipment in May, 1943 and those in Ceylon the following August.

70. Very few teleprinters were available in 1942 and the point-to-point organisation had to bear the burden of almost all signalled messages between R.A.F. bases. The few teleprinters that were available were, more often than not, rendered useless as a result of persistent line faults.

71. To implement the plan for the establishment of an Indian Observer Corps system in Bengal, posts were set up and brought into operation at Calcutta and around the industrial areas of Asansol and Jamshedpur. This network used the railway telephone system for the passing of plots and were so placed that penetration of the defences would have occurred before any information could have been passed. By December, 1942, however, the deployment of R.A.F. wireless observer units on the coast south and south-east of Calcutta and in the forward eastern areas was begun. These units largely replaced the Indian Observer Corps in the provision of cover for low flying aircraft. Later, however, when the manpower situation became acute, a number of mobile wireless companies were formed by the Indian Observer Corps, and as the training of these units was completed, they were deployed to relieve the R.A.F. wireless units. The change-over was completed in February, 1944. Generally speaking, the expansion of the Observer Corps in India was delayed by the shortage of equipment aggravated by poor telephone facilities.

72. The radar situation was more healthy. Though in March, 1942 there was not a single radar station in the whole of India by the end of the year some form of coverage had been achieved. In all, fifty-two radar stations were operational in December, 1942 and filter rooms to co-ordinate their plots had been established at Calcutta, Imphal, Comilla, Bombay, Madras, Colombo and Trincomalee. At Bombay a Radar Installation and Maintenance Unit was formed for the purpose of experiment andmaintaining the increasing chain of stations. Following the expansion of the radar chain and filter rooms, operations rooms were set up at Calcutta and in Ceylon, while combined operations and intelligence centres were established at Air Headquarters, India and at the operational group headquarters. By the end of 1942, therefore, a system of plotting and recording tracks of enemy aircraft was approaching full development and the complicated problem connected with the interception of fast modern aircraft were being gradually resolved.

73. Development went on apace throughout 1943 and by November of that year, wireless communication and radar equipment, both air and ground, was approaching the standard of that in other theatres.

Training - Mainly Concerning the Indian Air Force

74. The expansion of the Air Forces in India involved an increase in training establishments, not only for 'ab initio' training of Indian pilots, observers and wireless operator airgunners, but also for refresher courses of all kinds for R.A.F. personnel. The training organisation, which had remained substantially unchanged since 1939, no longer sufficed, and numerous new schools for officers and other ranks were opened in 1942 and 1943.

Modernisation of the Air Forces

75. On the Royal Air Force side, with the expansion grew the necessity for refresher training on operational types of

aircraft, for air gunner training, for armament practice camps, for air bombing and air-to-air firing, for the training of a great number of wireless operators, for G.R. schools, technical training schools, ground defence schools, administrative schools and many others. But there was nothing in India on which to build them. Again starting from scratch, schools of every kind had been established by the end of 1943, when it was possible to give any aircrew operational or refresher training, and for almost any airman to take courses of instruction for higher trade groups.

76. During 1942 the War Department of the Government of India had under consideration the future of the Indian Air Force. "We are particularly anxious" they said "that the I.A.F. should in time become an independent self-contained and truly national force with its own organisations, additions and esprit de corps, similar to the Indian Army..... we fully realise that for a long time to come much assistance from the R.A.F. will be necessary. We think, however, that the time has come for initial steps to be taken to pave the way for the I.A.F. to obtain a separate unity". Future planning for the I.A.F. was with the object of achieving the above but as will be seen later, great difficulties were encountered. Indeed when the Far Eastern war ended in August, 1945, the I.A.F. was still incapable of managing entirely its own affairs.

77. In expansion, as in many other respects, India benefitted from the impact of war. Numerous facilities for flying and technical training were thrown open to the youth of the country. But a great many were unsuitable. The official language of the I.A.F. was English, and recruitment confined to men with a working knowledge of that language. This brought about two important results. The average I.A.F. recruit had to be of higher intelligence than his Army counterpart and was, therefore, harder to obtain. The I.A.F., however, was never troubled with the difficulties arising from a class system of recruiting and its personnel, varied though they were, formed a homogeneous whole.

78. The process of expansion was so rapid that many problems arose. The Indian Air Force was completely Indian, unlike the Indian Army, and no European could hold a commission in the I.A.F. Up to the beginning of 1942, R.A.F. officers did in fact command I.A.F. units without, however, being specifically commissioned in the I.A.F. After the success of No. 1 Squadron (IAF) in the Burma campaign, policy was changed and no R.A.F. officers were appointed to command I.A.F. units. It will be seen that as far as was humanly possible, the Indian Air Force was kept Indian. As a result of the rapid expansion of the Service following the outbreak of the Japanese war, there was a definite lack of Indian officers suitable to assume important commands, and so the I.A.F. depended almost entirely for its leadership on the limited number of officers who in pre-war days were Cranwell trained. The intake of officers greatly increased with the expansion but their training was necessarily far less thorough than that given at Cranwell, and few leaders of any merit emerged. This fact combined with the unwillingness of Indians to volunteer for aircrew duties, and the readiness with which traind G.D. officers often accepted ground jobs, caused some doubt as to the future of the I.A.F. One I.A.F. squadron was sent into the line in the spring of 1943 but had to be withdrawn quickly, since its training, discipline and morale proved inadequate for modern warfare. The death of the Commanding Officer in a flying accident gave the opportunity to put in a British commander who proved unable, without other British staff, to knock the Squadron into shape and he was soon relieved by another Indian officer. The shortage

of pilots generally also made it necessary to man Nos. 9, 10 and 12 I.A.F. (Fighter) Squadrons with 50 per cent. British crews and to post six R.A.F. aircrews to No. 8 I.A.F. (Vengence) Squadron.

79. By November, 1943 it had not been possible to make a final decision on the extent to which the I.A.F. should be stiffened by a cadre of R.A.F. personnel. Of the several squadrons that were sent to the Burma front during the campaigning season of 1943-44, some were entirely Indian. It was planned that if they acquitted themselves well, the number of R.A.F. personnel serving with them would be reduced. On the other hand it seemed likely that the number of R.A.F. personnel in all I.A.F. squadrons would have to be increased and even ultimately to institute a system whereby R.A.F. officers might be seconded to the Indian Air Force in the same way as British officers were seconded to the Indian Army.

80. Politically it was regrettable that the ten I.A.F. squadron target had not been achieved by the end of 1943. But delay was caused by a sharp drop in recruiting figures during 1943, the high wastage rate in training and by congestion at the operational training units owing to the low seviceability of aircraft. Eight squadrons were, however, ready for operations by November, 1943 and another two were forming. The new aim was to have all ten I.A.F. squadrons operational and manned entirely by I.A.F. personnel by the end of 1944.

81. The foregoing gives a brief outline of the problems encountered by the R.A.F. in trying to expand the Indian Air Force. It is perhaps beyond the province of this narrative to probe more deeply into the subject since the history of the I.A.F. is a story which merits separate treatment. In passing it might be mentioned that the Indian Air Force was honoured with the prefix "Royal" to take effect from the tenth anniversary of its formation. On 1 April, 1943 the I.A.F. therefore became the Royal Indian Air Force.

82. On 15 November, 1943, Air Headquarters, India became H.Q. Air Command, South East Asia and the new Command transferred responsibility for training and recruiting R.I.A.F. personnel to a new and smaller A.H.Q., India. The new Headquarters became responsible for the control and development of the R.I.A.F. generally and for operations on the North-West Frontier, which since 1941 had been a purely Indian Air Force commitment.

The United States Air Forces

List 15/52 "The USAAF in India - 1942-1944"

83. Following the initial battles in the Pacific which were precipitated by the Japanese attack on the Philippines, some of the first engagements by American air forces with the enemy were those in Burma. American pilots in the employment of the Chinese Government and calling themselves the American Volunteer Group (A.V.G), were sent to Rangoon to operate with the R.A.F. in an attempt to maintain air superiority over the port, through which American supplies for China passed. The A.V.G. first went into action on 20 December, 1941, less than two weeks after the Pearl Harbour attack, using P-40 (Tomahawk) aircraft which had been supplied to the Chinese Government under lend-lease arrangements.

84. In the meantime a contingent of the United States Army Air Force was on its way to the Philippines when the news of Pearl Harbour reached them and they were diverted to Australia where they were supposed to prepare for a move to Java. When the Allies were driven out of Java, it was decided to

send these forces to India where they arrived on 12 March, 1942. On the same day a fighter group arrived at Karachi with ten P-40's, the only remaining aircraft belonging to the group following the sinking of one, and the damaging of the other ship carrying the aircraft to India. Major-General Lewis L. Brereton, U.S.A. flew from Java to India to assume command of the United States Army Air Forces on 5 March, 1942. His total force amounted to the ten P-40s and eight B-17s (Fortresses) six of which had been diverted to India while on their way to Java.

85. There was little about India, except for the strategic situation, to recommend it to the Americans as a theatre of operations. No sea route from the United States to India was less than 13,000 miles and shipments required a minimum of two months to reach India. Karachi, selected as the chief port and entry for American supplies was 1,000 miles away from the centre of operations. Consequently the Americans encountered similar problems to the British in regard to communications.

86. In China, Lieutenant-General Joseph W. Stilwell, U.S.A. was head of the United States Military Mission there. During March, 1942 he took over command of the Chinese forces fighting in Burma and controlled their withdrawal during April and May, 1942. On coming out of Burma he admitted that "The Japs beat the hell out of us". He was made Commanding General of all United States forces in China, Burma and India (C.B.I.Theatre) and set up headquarters at Chungking and New Delhi.

87. When the Japanese overran Burma, the A.V.G. moved into China and began to operate from Chinese airfields. This was a strange situation indeed since the A.V.G. was operating under an American Officer in the same theatre as U.S. armed forces. It was therefore planned that the U.S.A.A.F. should take over the functions of the A.V.G. when the contracts of the group expired on 4 July, 1942. Without question the most experienced American pilots were those who had been members of the A.V.G. and since it was obvious that they could not continue to fly under American officers as civilians, it was hoped that their skill and experience might be used by their country, and that many of them would continue to fight in the uniform of the U.S.A.A.F. In the event twenty-five pilots of the A.V.G. volunteered but the American authorities were disappointed that more did not come forward.

88. On 4th July, 1942 the A.V.G. was abolished and in its place the China Air Task Force (C.A.T.F.) was formed. Though located in China the C.A.T.F. was placed under the control of the Tenth U.S. Army Air Force whose Headquarters were at New Delhi. Farther west the Indian Air Task Force (I.A.T.F.) was formed at Din Jan on 3 October, 1942. For the transport operations of the Tenth U.S.A.A.F., the Assam-Burma-China Ferry Command (A.B.C.F.C.) was formed and given the task of ferrying supplies into Burma and China and to evacuate civilian refugees from Burma. The general situation therefore, was that the Tenth U.S.A.A.F. had under its control three major flying units, the C.A.T.F., the I.A.T.F. and the A.B.C.F.C. Since the organisation of the Army Air Forces was dictated largely by necessity rather than the result of deliberate planning, changes continued to be made. On 1 December, 1942 the Assam-Burma-China Ferry Command was absorbed by the American Air Transport Command. On the tactical side, the two principal operational units of the Tenth U.S.A.A.F., the C.A.T.F. and the I.A.T.F., were located in different countries and separated by some hundreds of miles of the world's worst flying terrain. It was thus not a

perfect administrative or tactical arrangement. In order to improve matters, and also possibly to reward Brigadier-General Chennault(1) for his efforts in support of China, the China Air Task Force was disbanded on 10 March, 1943 and the Fourteenth U.S. Army Air Force, operationally independent of the Tenth, took its place.

89. Even with the formation of the Fourteenth Air Force the military organisation was still complicated. All United States Army forces in the China-Burma-India theatre under the command of General Stilwell who maintained a forward echelon at Chungking for operations in China, and a rear echelon at New Delhi. The Tenth Air Force was operating from India through the I.A.T.F. and the Fourteenth Air Force was operating from China with Headquarters at Kunming. Both were responsible to the theatre Commander, General Stilwell. In addition, the India-China Wing of the Air Transport Command, with Headquarters at Chabua (Assam), was responsible for transport operations throughout the theatre and in particular for all supplies carried over the "Hump". Its channel of control was direct to Washington and not through the Theatre Commander, although operations of the Americans from China were dependent upon it for supplies and materials. This was the situation in November, 1943 when Admiral Mountbatten became Supreme Allied Commander, South-East Asia.

90. The primary function of the Tenth Air Force was to keep the air supply route to China open so that General Stilwell's Chinese-American forces could operate and the American lend-lease commitments to China could be met. For this purpose, fighter aircraft were required for the defence of the American airfields in Assam and for the protection of aircraft flying between India and China. Later, however, a tactical force was assembled to assist the Chinese-American ground forces fighting in Northern Burma. In addition the American heavy bombers which had been sent to India took part in the long range offensive against the Japanese. During the period March, 1942 to November, 1943, the United States Army Air Forces expanded from a mere handful of B-17s and P-40s to over 425 aircraft of all types.

91. There were two projects, however, in addition to air operations in which the Theatre Commander was keenly interested. A programme of training Chinese units called for the employment of American officers. Secondly there was a plan for the construction of a land route from Assam through Northern Burma to China, called the Ledo Road, to take the place of the old Burma Road which had been effectively sealed by the Japanese advance.

(1) Gen. Chennault was previously in command of the AVG and later took over the CATF on its formation.

SECTION VI

AIR OPERATIONS MARCH TO DECEMBER, 1942

Introduction

1. Operations by the Allied Air Forces during 1942 fell into three well defined phases. Firstly, March to 20 May, the date on which the evacuation of Burma was completed, when aircraft based in Bengal and Assam provided such effort as could be mounted by a very tiny force. The R.A.F. and U.S.A.A.F. flew many transport sorties into northern Burma to evacuate service personnel and civilian refugees and they sent small numbers of light bombers on operations designed to hinder the enemy during the retreat. They mounted a few small scale raids against the Andaman Islands and elsewhere and they patrolled the waters around India and Ceylon. No mention is made in the following pages of the determined, if only partly successful, attempt by the R.A.F. to repel the enemy attacks on Ceylon in April since these activities have already been covered in Section IV. The second period in air operations of 1942 was from June until the end of September when the air forces waged a battle against the monsoon while maintaining a small scale air offensive against the Japanese in Burma. Air transport operations too, continued throughout the monsoon. During the third period, October to December, the Japanese Air Force began to operate in force, though never on the scale anticipated, and many areas in Bengal and Assam were subjected to air attack. Towards the end of the year our own bombers intensified their offensive against the Japanese and our own fighters were being increasingly used in their secondary role, that of offensive weapons.

Air Operations During the Retreat from Burma March to 20 May, 1942

Air Transport

O.R.B. 31 Sqdn. Sept., 1941 to April, 1942

2. Air operations by aircraft based in India really began in December, 1941 when the only two serviceable D.C.2 aircraft in India, belonging to No. 31 Squadron, began to ply between Calcutta and Rangoon carrying urgent stores and evacuating personnel. At the beginning of February, 1942, some D.C.2 aircraft of the same Squadron, which had been detached to the Middle East Command, returned to India and these, together with the two D.Cs already in the Command, moved to Akyab. Their task was principally to fly in reinforcements to Burma and to evacuate sick and wounded on the return trips. The Squadron operated thus until the end of March when they moved back to Dum Dum (Calcutta) after Akyab had become untenable owing to enemy action.

3. But the effort that could be mounted by No. 31 Squadron was very small indeed considering the requirements that had to be met. Every theatre commander at this time was well aware of the importance of air transport, and they all desired and required the Dakota aircraft which could combine the advantages of sturdiness, reliability and the capacity to lift considerable loads under almost any conditions. India Command, because of the poverty of ground communications, needed transport aircraft more perhaps than any other theatre. All they could show was a total of eight D.C.2 converted airliners, all of which were of early vintage. These aircraft were in a very bad way as, owing to the emergency nature of operations and the acute shortage of aircraft, major inspections had to be skimped. Without a doubt the air and ground crews did a magnificent job in keeping these aircraft in the air.

4. Up to the middle of April, 1942 the D.C.2s of No. 31 Squadron continued to operate from Dum Dum carrying reinforcements into Magwe, Shwebo and Myitkyina in turn as the battle moved northwards. Sick and wounded were evacuated from these places and civilians were brought out when there were no wounded to move. During April, three D.C.3 aircraft were delivered to No. 31 Squadron. These three aircraft and one D.C.2 were sent to Din Jan (Assam) and commenced operations from there on 22 April. The task went on until there were no airfields left to the Allies in Burma. Myitkyina, our last airfield fell to the Japanese on 8 May, 1942. On 9 May the first supply dropping sortie was flown. Evacuees travelling along three escape routes to India required supplies of food and medical stores to maintain them during their harrowing march through almost impassable jungle and hills.

A.A.F. Narrative 1941-42

5. The Americans participated too. The eight B-17 heavy bombers based in India were pressed into service as transports. From 8 to 13 March they transported from India to Magwe, Burma a fully equipped battalion of Iniskillin Fusiliers of 474 men and on return trips they brought out from Burma some 423 civilian refugees. Further American transport effort was mounted by ten D.C.3s recently arrived from Africa. They commenced supply operations in April, carrying ammunition and supplies to the retreating Chinese forces in Burma and evacuating wounded personnel and civilian refugees. After the fall of Mandalay on 1 May, the American D.C.'s defied every normal limit of pay-load in order to evacuate as many personnel as possible before the Japanese could close in upon the few airfields still in Allied hands. After the fall of Myitkyina the Americans joined with the R.A.F. in dropping supplies to the retreating forces and refugees.

Despatch by AVM. Stevenson Jan-May, 1942

6. In all a total of 8,616 persons, including some 2,600 wounded were evacuated from Burma by the Allied air forces. In addition forty-nine tons of supplies were dropped for victualling refugees and troops.

7. With the fall of Rangoon in the early days of March, the Americans turned their attention to the problem of supplying China with the materials of war. The loss of Rangoon had severed the land line of communication with China and the only way to keep China in the war was to use air transport to supplant the old Burma Road. The route from India to China was pioneered before Pearl Harbour by the China National Airways Corporation who used Myitkyina as a staging base. The aim of this air ferry had originally been to supplement the supplies transported overland to China but with Rangoon in Japanese hands, the air route became the sole link with China, and as such became a vital factor in Far Eastern strategy. While Myitkyina remained in Allied hands the air route from India to China was a hazardous undertaking but later when aircraft had to fly direct from Assam to Kunming the dangers greatly increased. In April, 1942 an American officer Lieutenant-Colonel William D. Old was the first to fly a transport aircraft across the mountains which divide India from China.

A.A.F. Narrative 1941-42

8. The new situation demanded an air cargo service large enough to replace the old Burma Road. In this connection the ferry operations of the Americans throughout April, May and June, 1942 had not only an intrinsic value, but a far reaching effect as well, for their success pointed the way to a greatly increased service. Eventually more supplies reached China by air than had ever passed along the old land route. But the hazards of the "Hump" route took their toll and losses in the early days were extremely high. As flying terrain, the air route was considered one of the most

difficult in the world. Much of the country was uncharted, ice-capped peaks rise to 20,000 feet and dense jungles cover the valleys below. The weather was unusually bad and about fifty per cent. of the flying over the route had to be carried out on instruments. At first wireless aids to navigation were almost non-existant but later great efforts were made to safeguard aircraft in an area where the most turbulent weather in the world was experienced. Incredible air currents threatened the transport aircraft, jagged peaks "lined the clouds with rocks" and Japanese fighters in the earlier days were constantly trying to intercept the unarmed aircraft making the crossing. Flying over other mountainous regions of the world was considered by pilots of the "Hump" route as mild compared with the lonely and awesome snow peaks, the terrific down drifts and powerful cross winds and the seemingly endless square miles of jungle, without a single spot for a landing, which marked the towering barrier between India and hard-pressed China.

Offensive Air Operations

Despatch by AVM. Stevenson Jan-May, 1942 and O.R.B. 221 Group Apr. to May, 1942

9. General Alexander's Army moved northwards from Rangoon through the dry zone of Upper Burma to Mandalay, with Headquarters at Shwebo, and finally withdrew across the Chindwin River through Kalewa and over the mountains to Tamu and Imphal. The Burma Army passed through the forward screen of IV Corps troops on the Lochao Pass on 18 May, and reached Imphal on 20 May, 1942. During the eight weeks from the Magwe action, when the greater part of the R.A.F. in Burma was destroyed on the ground, until 20 May, offensive operations by R.A.F. aircraft in India continued against the enemy.

10. R.A.F. fighter action was limited to such sorties as could be mounted within range of the solitary Mohawk Squadron based at Din Jan. Bomber operations were confined to No. 113 (Blenheim) Squadron based in Bengal, which had been evacuated from Burma at an early stage. Sorties by No. 113 Squadron comprised mainly reconnaissance patrols over western Burma and over the Bay of Bengal. Some bombing raids were carried out, however, by staging the Blenheims first at Magwe and later at Lashio. When Magwe was occupied by the enemy, Blenheim light bombers from Bengal began attacks on airfields in the Irrawaddy valley, on Yenangyaung oilfields and against rivercraft on the rivers of Burma.

11. On 12 April the first attack was made by India based aircraft in support of the Army in Burma when four tons of bombs were dropped on Japanese troops at Nyaungbintha. The enemy and his communications were also attacked at Singbaungwe, Allanmyo, Magwe, Sandoway and Taungup, in the course of which nearly seven tons of bombs were dropped. Attacks by the R.A.F. and B-17s of the U.S.A.A.F. continued against many types of objectives in Burma. In all fifty-eight raids took place in support of the Army, most of them in the British sector though on three occasions targets on the Chinese front were attacked. The airfields of Mingaladon (Rangoon), Akyab, Myitkyina and others were kept under a light harassing scale of attack and when the enemy attempted to establish forward air bases, bomber action made these untenable by the destruction of first-line enemy aircraft on the ground. Of the fifty-eight bombing raids, thirteen were mounted by the U.S.A.F.F. and forty-five by the R.A.F. A total of 104 tons of bombs was dropped and to give added effect to the attacks, most targets were machine-gunned too.

12. Some of the bomber effort was expended in attacks on rivercraft, when the Japanese began to use them to outflank

the retreating Burma Army. The waterways in Burma were therefore continually harassed and a total of thirteen tons of bombs was aimed at river steamers, barges and wharves. A particularly effective attack was made on a concentration of rivercraft at Monywa on 4 and 5 May. It was, by its delaying action, largely instrumental in preventing an encircling movement on the right flank of our forces, then withdrawing from Yu to Kalewa, a movement which if successful would have proved highly embarrassing for the Army.

13. Throughout the period the main burden of R.A.F. offensive operations fell to the Blenheims though a few Wellington aircraft did become operational. Attempts to send the Wellingtons on bombing raids did not meet with much success. Six of them were despatched on the night of 1/2 May to bomb Magwe but bad weather was encountered. One Wellington crashed into the sea, two force landed and the other three returned to base with their bombs.

14. During March, 1942 a serious situation arose in the Bay of Bengal. At Calcutta a quarter of a million tons of Allied shipping lay within striking distance of an enemy naval force and there were no ships of the Royal Navy available for protection. Moreover, the shipping was within range of enemy long range bombers based at Mingaladon and Magwe. Instructions were therefore issued for the port to be cleared of shipping. It was thought that if enemy air reconnaissance could be prevented, the Allied shipping at Calcutta might pass through the Bay of Bengal undetected.

15. From March, 1942 onwards, R.A.F. Hudsons operating from bases in Bengal, maintained continual reconnaissance patrols over the Bay of Bengal, down the Burma coast and over the Andaman Islands. During these reconnaissances Hudsons discovered a concentration of enemy shipping and a number of flying boats at Port Blair, the latter evidently being the principal coastal reconnaissance force of the enemy. At first eleven enemy flying boats were found and by 14 April this number had risen to thirteen. There were also indications that the enemy had developed the airfield at Port Blair and that local fighter defence had been installed. Two out of three serviceable Hudsons of No. 63 Squadron, the only aircraft available with the necessary range, took off from Akyab on 14 April with instructions to destroy or damage all aircraft of the enemy reconnaissance force. A determined low-level attack was made on the flying boats, which were conveniently moored in lines, and two were left burning, one sinking and the remainder of the thirteen damaged. The attack evidently caught the enemy by surprise since their fighters did not become airborne in time to interfere with the attack.

16. A second raid was deemed necessary four days later to make sure that the surviving flying remained useless to the enemy during a very critical period. In the second raid on 18 April, the two Hudsons were subjected to fighter attack but making mast high runs, they accounted for another five enemy aircraft. One of the Hudsons did not return and the other was badly damaged by enemy fighters. But the attack was highly successful and the enemy flying boats were rendered inactive, not only during the critical period when seventy Allied ships were making passage through the Bay of Bengal, but for some months afterwards.

The Army Air Forces in World War II Volume I

17. Though limited to a mere handful of heavy bombers, the striking arm of the Tenth U.S.A.A.F. despatched small numbers of aircraft to attack targets in the Andaman islands and in Burma. Their first offensive operation was flown on 2/3 April when two B-17s and one LB-30 dropped eight tons of

bombs on enemy shipping at Port Blair. The bombers claimed hits on an enemy cruiser and a transport. At General Stilwell's insistence the Tenth Air Force thereafter devoted its attention to the Japanese in Burma. Formations of six B-17s bombed Rangoon by night on 3/4, 16/17 and 29/30 April. During the first week of May, U.S. bombers struck at Mingaladon, a former R.A.F. airfield at Rangoon which the Japanese were using as a defensive fighter base. During the first attack it was estimated that forty Japanese aircraft were destroyed on the ground and twenty-five more damaged. At this point attention was drawn from Rangoon by the capture of Myitkyina on 8 May. Recently constituting a key base on the air route to China, its airfield represented a serious threat since the American transport base at Din Jan lay within easy reach. Myitkyina airfield was bombed by B-17s on 12, 14, and 16 May. Reconnaissance after the raids revealed no signs of enemy activity at Myitkyina, which for a time at least remained in an unusable condition.

Passim

18. 20 May, 1942 marked the end of the first era in air operations. By that date the major part of the Army had reached Indian soil and had taken up positions along the 700 mile frontier in anticipation of a Japanese assault upon India itself. As the British and Indian troops moved into the mountains in Manipur, the monsoon broke and it washed out the Tamu road over which the last echelons had just passed. On 20 May, Alexander's Army of Burma ceased to exist as a command and his surviving troops were incorporated into the IV Corps of India Command based at Imphal. All Burma except the far northern tip around Fort Hertz had passed into enemy hands and for the ground and air forces there began a period of reconstruction and preparation for coming battles.

Air Operations During the Monsoon June to September, 1942

Despatch by F.M. Wavell Mar-Dec. 1942 Supp. to London Gaz.

19. Of the 12,000 men who marched out of Burma, barely a sixth were anything but sick. Nevertheless they were still under arms and they took up positions along the frontier for the monsoon. On the Eastern frontier of India there was little activity during the monsoon period. Some good patrol work was carried out in the Chindwin Valley by the Army and local levies in difficult conditions aggravated by the exceptionally heavy rains. All northern Burma and Assam is highly malarious during the rainy season. It seemed at one time that the enemy intended to move from the Chindwin and Myitta valleys into the Chin Hills, which were held only by local levies who could not be supported owing to the complete absence of communications. The Chin tribes became alarmed by Japanese threats, they were depressed by the shortage of food and there was a danger that they might come to terms with the enemy. This danger was averted by vigourous bombing of the enemy and the dropping of supplies by transport aircraft. In June, 1942 it was planned to re-occupy Fort Hertz, in the extreme north of Burma, in order to protect the landing ground there and to raise and support Kachin levies to operate against the enemy between Myitkyina and Fort Hertz. There was no road from India to Burma and a detachment could only be sent to Fort Hertz by air. A small detachment was parachuted into the base to prepare the landing ground but owing to the monsoon weather, it was September before the garrison could be flown in.

20. Air operations during the monsoon were naturally on a small scale but were notable for the skill and determination with which the crews operated in bad weather. Targets on the Burma coast, in the Chindwin valley and on Akyab were attacked with success and constant reconnaissances over the

Bay of Bengal, over enemy airfields in Burma and the port of Rangoon were maintained as far as possible. Air information was, however, restricted not only by the weather but by the acute shortage of long range aircraft. During the monsoon period the enemy air force was completely inactive.

Air Transport Operations

Despatch by F.M. Wavell Mar-June 1942

21. In addition to the troops evacuated from Burma, India Command had to deal with some 400,000 civilian refugees in varying stages of distress. Some came by sea from Akyab before it fell into enemy hands; large numbers came through Imphal and others through the Hukawng Valley route to Ledo. The arrangements to feed and transport these people presented a very serious problem while from the security aspect it was necessary to set up an organisation to prevent the infiltration of enemy agents. The Imphal route, through which about 180,000 refugees entered Assam, was comparatively easy but the route up the Hukawng Valley from Myitkyina and Shingbwiyang to Ledo, was from Shingbwiyang onwards, only a difficult mountain track with several rivers to cross. After the rains had begun, mud and swollen rivers made this route impassable and a number of refugees were marooned at Shingbwiyang for the monsoon period, having to be fed from the air. Some parties perished in an attempt to reach Ledo; others who attempted to reach Ledo from Fort Hertz had to be supplied by air and were only rescued after considerable difficulty.

O.R.B. No. 31 Sqdn. Jun-Jul. 1942

File AHQ(I) 83/23/Air Encl. 4

22. Throughout the monsoon period the R.A.F. maintained a small detachment of transport aircraft in Assam. These aircraft were constantly out searching for the streams of refugees who were trying to climb through the dense jungle to the safety of Assam. They were located in jungle clearings and by the banks of swollen rivers and supplies were parachuted to them. After the Japanese had pushed through Burma a small party of British personnel, including some women, reached Fort Hertz. This party was without food, money, arms or spare clothing and the Japanese were reported to be at Sumprabum and moving north on Fort Hertz. It was decided that a determined attempt should be made to evacuate these unfortunate people by air but several sorties mounted by the R.A.F. in early June were frustrated owing to bad weather. On 13 June, 1942, however, the weather cleared sufficiently to enable a D.C.3 of No. 31 Squadron to reach Fort Hertz. Landing and taking off in a very confined space the aircraft successfully evacuated twenty-three persons.

23. The supply of refugees was not the only problem which faced the air forces. Several Army detachments were located in the Chin Hills and could not be supplied other than by air. Local levies too required some measure of air supply and some ferrying work was performed. Five R.A.F. D.C.3 and D.C.2 aircraft fulfilled this task, assisted on occasions by American D.C's whenever they could be spared from their vital task of supplying China. This transport work went on throughout the monsoon.

File AHQ(B) 8/13/Air

24. The attention of India Command soon focussed upon Fort Hertz which was thought to hold possibilities as an emergency landing ground on the India-China ferry route and as a base for the raising of geurilla bands to assist in the ultimate re-conquest of North Burma. It was not known if Fort Hertz was occupied by the Japanese, since many conflicting rumours were current, but enemy possession of the base was thought unlikely. After a reconnaissance of the area it was planned that two Lysander aircraft should fly-in an Army Colonel, a W/T set and a wireless operator. If the

landing ground could be made serviceable for transport aircraft the garrison force would then be flown in.

25. Two independent reconnaissances of Fort Hertz were made on 22 July, 1942 by a Blenheim and by a flight of Mohawks but no enemy activity, friendly or otherwise, was reported. The landing ground was examined at low level and it appeared waterlogged and unfit for any aircraft. A further Blenheim reconnaissance was made on the morning of 23 July during which the wet state of the ground was confirmed. Nevertheless, on the same afternoon an attempt was made by two Lysanders to land the Army Colonel, the W/T set and operator. But the attempt was unsuccessful. The Lysanders, unable to gain sufficient height to clear the mountains, sought to penetrate through the valleys below the cloud base. Eventually one Lysander returned to Din Jan while the other ran out of fuel and crashed some twenty-six miles from Din Jan killing the pilot. The Colonel passenger, however, escaped injury but was badly shaken and it was necessary to find another colonel to go into Fort Hertz.

26. Since the Lysander detachment at Din Jan suffered a great deal through low serviceability, an Audax aircraft was commissioned to fulfil the task. But owing to the uncertain condition of the landing ground it was deemed advisable to drop a parachute detachment near Fort Hertz to investigate local conditions and to see if any Japanese were in the area. After some delay, the parachute force comprising two officers and nine other ranks was successfully dropped near Fort Hertz on 13 August, 1942 by a Lodestar aircraft borrowed for the occasion from a Communications Flight. Then on 20 August an Audax landed at Fort Hertz and off-loaded the Army Colonel. By 24 August a landing ground, measuring 1,100 x 50 yards, had been prepared for transport aircraft and on the following day a D.C.3 of No. 31 Squadron made a trial landing there. On the same day U.S.A.A.F. and R.A.F. bombers attacked the Japanese occupied airfield at Myitkyina in order to stop possible interference during the fly-in of the Fort Hertz garrison.

27. By 10 September the operation had been completed during which a total of 197 persons, together with necessary equipment, had been transported to Fort Hertz by air. Thereafter the force was entirely dependent upon air supply carried out by No. 31 Squadron detachment located at Din Jan.

Offensive Air Operations

IIJ50/47/1

IIJ50/47/1
Misc. Reps.
of air Ops.
May-Dec.
1942

28. The general state of morale in No. 221 Group, the Group originally responsible for all R.A.F. offensive operations, was far from satisfactory and the maintenance of aircraft very poor indeed. The reasons for this can be attributed to the defeatist attitude engendered by the retreat from Burma(1) and the primitive living conditions under which the squadrons were obliged to work. On top of this there was an acute shortage of tools and equipment necessary to keep the squadrons in fighting trim. At one period the situation was so bad that the Blenheim serviceability rate(2) reached the incredibly low figure of two per cent. At Asansol, the main Blenheim base, there was only one tool kit and one incomplete set of

(1) The majority of No. 221 Group personnel were those evacuated from Burma.

(2) Three Blenheim squadrons were operating in June, 1942, Nos. 34, 60 and 113.

ground equipment. The squadrons lived under canvas. The sickness rate was high and many men died of heat exhaustion.

29. It was planned that the Blenheim squadrons should operate every day and while this was achieved for a short time, it was soon reduced to once every three days. But in spite of the difficulties encountered serviceability was improved by a great deal of hard work. While the ground crews were waging their battle against the monsoon weather and shortages, other attempts were being made to increase the efficiency of the air striking force. Many drastic changes were made in methods of training, commanding officers were replaced by others who had not participated in the gruelling campaign in Burma, and other personnel were generally moved around. As a result efficiency improved somewhat and a better spirit became apparent. These points are raised as they are of importance in assessing the scale of effort against the Japanese. Had the striking force been fully equipped and adequately trained a far higher effort could have been mounted. In the event, bombing raids during the period June to September, 1942 were carried out by small formations of from one to four aircraft.

ILJ50/47/1

30. During May and June, 1942 the Blenheim squadrons were engaged on offensive reconnaissances inside Burma, strikes against rivercraft in the Chindwin River and other waterways, occasional attacks on shipping using the port of Akyab, attacks on Akyab town and against enemy airfields in Burma. At the beginning of June re-arming and re-fuelling parties were established at the forward airfields of Agartala and Chittagong. Up to this time all targets for Blenheim aircraft had been out of range from Asansol and re-fuelling had had to be carried out at Dum Dum, this giving the Blenheims only a slight increase in range. The one Wellington squadron in Bengal also took part in the air offensive, operating mainly by night against enemy airfields. But they did not play a big part in operations as many maintenance troubles arose and quite often such Wellingtons as could be made serviceable were utilised for ferrying tasks to help out the transport detachment in Assam.

U.S.A.A.F. Hist. Narr. 1941-42

31. The situation with regard to the American Tenth Air Force at the beginning of June, 1942 was comparatively good. An effective, though small air striking arm had been built up and long range operations had been undertaken, principally against Rangoon. Before the end of June, however, the Tenth U.S.A.A.F. lost virtually its entire striking force. When the British suffered a major defeat in the battle of Knightbridge in Cyrenaica, General Brereton, Commander of the Tenth U.S.A.A.F. was ordered to the Middle East and on 26 June, 1942 the move of all available American bomber aircraft began.

Clandestine Air Operations

ILJ50/47/32 Notes by Int. Branch H.Q. ACSEA. Jan. 1945

32. After the withdrawal of our forces from Burma in 1942 it became a matter of some urgency to obtain intelligence of enemy movements since at that time a Japanese invasion of India was considered imminent. The infiltration of agents overland into Burma was a long and arduous task calling for highly trained jungle trekkers. Consequently in May, 1942 a proposal was made by General Headquarters, India that the R.A.F. should drop agents into Burma by parachute.

33. Air Headquarters, India agreed to do this. No special organisation existed for this type of work and so the Air Landing School at Delhi, a formation concerned with the training of paratroops, was commissioned to provide an aircraft and crew. A Hudson aircraft was sent to Din Jan (Assam) to carry out the first clandestine air operation from India.

By moonlight on 24 June, 1942, two agents were dropped in North Burma and from the R.A.F. point of view the operation was a complete success. No further clandestine operations were carried out during the monsoon period but the success of the initial sortie encouraged General Headquarters, India to plan a series of operations to be accomplished in the ensuing months.

Air Operations Post Monsoon October to December, 1942

34. As the monsoon petered out, squadrons moved forward to advanced landing grounds in eastern Bengal which comprised fair weather strips prepared by the levelling of paddy fields. With the improvement of the weather a systematic air offensive began against enemy airfields and communications in Burma and the effort mounted was far greater than had hitherto been possible. More aircraft were available and maintenance had improved. Bomber attacks were made by both day and night, support for the Army was provided in Arakan and Manipur, fighters defended Calcutta, Chittagong and other important places and air cover for shipping was included in the many tasks demanded of the air forces. Visual and photographic reconnaissance was carried out and transport aircraft dropped their cargoes in the Chin Hills for the local troops, at Sumprabum (North Burma) for the Kachin levies and at Fort Hertz for the garrison there. The Japanese Air Force showed only sporadic activity. In October he made a series of raids on our forward airfields and in December on the city of Calcutta.

Air Superiority

35. British pilots who had seen air combat against the enemy in Burma and Ceylon had gained a respect for the qualities of the Japanese airmen. The lessons of the Burma campaign and the Easter attacks on Ceylon were passed on to the pilots newly arrived from Europe and the Middle East. Pilots accustomed to fighting with Me 109s who tried climbing straight into a dog-fight did not last long over the India-Burma border, new tactics to counter the different characteristics of the new opponent had to be evolved. Malaya, Rangoon and Ceylon had exploded the theory that the Japanese were out of their element in the air and, moreover, the aircraft they flew were useful air weapons. They had long range fighters and efficient bombers and they had plenty of them. Perhaps their greatest weakness lay in their air commanders who failed to make the best overall use of the available strength. In 1942 the enemy fighters were more manoeuvreable than our own then in the theatre and unless the Hurricane had the advantage of height, the odds were in favour of the Japanese. The main disadvantage of the enemy aircraft was that their tanks were not self-sealing and no protective armour was carried for their crews.

36. It will be seen therefore, that the first requirement in the air defence of India was an adequate early warning system which would enable the Hurricanes to gain the necessary advantage of height and so cancel out the superior rate of climb and manoeuvreability of the enemy fighters. Though the monsoon was sedulously used to build up the warning system, December, 1942 did not see its full development, mainly owing to the shortage of equipment, or at least the right kind of equipment. Training of pilots, however, had progressed satisfactorily and they became well versed in the tactics best calculated to foil the enemy during his anticipated air onslaught against eastern India.

37. Partly because better warning could be obtained, partly because of the absence of adequate dispersal at nearby

airfields and partly for the morale of the local Bengali, Hurricanes used a public highway in the heart of Calcutta as a landing ground. This highway, called Red Road, is parallel to Chowringhee, Calcutta's main street. In London this would be the equivalent of a landing ground in the Mall. But the camber is sharper on Red Road than in the Mall and tended to send fighters into the balustrades. The Road is slightly narrower in width than the wing span of a Hurricane. Thus exceptional piloting was needed.

38. Throughout the monsoon period the pilots in Calcutta had waited for the attacks which never came. The Japanese Air Force had retired for the monsoon and not until October, 1942 did they first appear over eastern India.

File AHQ(I) 79/1/Air Encl. 22A

39. At the end of September, 1942, the defence of the Assam airfields and other vulnerable points in the area, was taken over completely by the Americans. The United States fighter squadrons in Assam were also responsible for the defence of the "Hump" route to China. Since the airfields in Assam were serving as supply bases for aircraft on the China run, it was an obvious target for the enemy and a series of raids developed during the period 25-28 October, 1942. The heaviest attack occurred on the 25 October when Din Jan and Chabua airfields were both bombed and machine-gunned, while enemy fighters strafed the airfields at Dum Duma (near Ledo) and Mohanbari. It is difficult to assess the numbers of enemy aircraft involved since it seems certain that many Japanese aircraft attacked more than one objective. The raid on Din Jan was carried out in three waves. First a formation of nine Army Type 97 heavy bombers attacked from 500-1000 feet. Almost immediately another eighteen Army 97s carried out pattern bombing from 8-10,000 feet. Then fifteen enemy fighters came in to strafe A.A. posts and grounded aircraft while fifteen other fighters remained aloft as top cover. The attack on Chabua was made by a force of eighteen bombers. The number of bombs dropped on both Din Jan and Chabua was estimated at 175, the bombs being either 50 kilo. H.E. or 15 kilo. anti-personnel. This appears to be a small load for a force of forty-five bombers and it would seem that the same force attacked both airfields.

40. Very little damage was inflicted by H.E. bombs though the anti-personnel fragmentation bombs did a certain amount of damage to aircraft, buildings and personnel. But the most effective attack from the enemy point of view was that of ground strafing. Five transport aircraft, five P-40s and two P-43s were destroyed on the ground and four transports and thirteen fighters were badly damaged. Only three minutes warning of raid was received and consequently no major air battles took place. Six P-40s scrambled just as the attack developed and they were immediately attacked by enemy fighters. One P-40 was shot down during take-off and a second did not return to base. On the following days the American fighter force was reduced to six aircraft only.

U.S.A.A.F. Hist. Narrative 1941-42

41. Further attacks on the airfields in Assam on 26-28 October were less damaging, however, and the few U.S. fighter aircraft shot down two of the enemy and probably destroyed another in a series of unco-ordinated combats. These attacks served to emphasise the seriousness of the situation in Assam but efforts to establish an adequate warning system had met with little success as the necessary equipment was not available. Fortunately the enemy did not follow up with further attacks and the business of supplying China by air went on without further interference.

File AHQ(I) 79/1/Air Encl. 12A

42. A force of thirty enemy fighters attacked Chittagong on 26 October, 1942 and owing to the ineffective radar system he achieved complete surprise. Very little damage was sustained, however, though one Blenheim was destroyed on the ground and there were two personnel casualties. This raid indicated the impracticability of basing fighters on the Agartala-Chittagong line until improved warning facilities were made available. Consequently, no large scale forward movement of fighter aircraft took place until December, 1942. Though enemy activity had increased it did not reach the scale of intensity that had been anticipated. The enemy had over 200 first-line aircraft in Burma and could have called upon many more in Siam and Malaya. The constant bombing(1) of his airfields had some effect upon his operations and he contrived to keep his bombers based beyond the range of Allied aircraft. But there is no doubt even in 1942 that his under-estimation of the importance of air power was beginning to be felt, since his keen desire to conserve aircraft and crews would indicate the uncertainty of reinforcement.

AHQ. Bengal DIS. 103

File AHQ(I) 79/1/Air Encl. 26A

43. After the Chittagong raid on 26 October no further attacks were mounted by the enemy until 13 November when six escorted bombers attacked two Naval launches in the Naf River. In December, however, the enemy made a number of raids on Calcutta and the Chittagong area and his losses were extremely light. He began on 5 December when twenty-four bombers and twelve fighters attacked shipping and the jetty at Chittagong. A coal flat was sunk but most bombs fell into the river. Six Mohawks were scrambled and intercepted the enemy formation after the attack; one enemy fighter was shot down and another probably destroyed for the loss of one Mohawk. Chittagong was again attacked on 10 December by twenty-eight enemy bombers and twenty fighters. Some rolling stock was damaged and damage to railway lines was extensive. Interception by the R.A.F. was effected and in air combat the enemy lost one aircraft for certain, another was probably destroyed while the R.A.F. lost three fighters and two pilots. A.A. also went into action and claimed two enemy aircraft as destroyed.

File AHQ(I) 79/1/Air E. 30A and 31A

44. Five raids, three of which were heavy, were made by the enemy on 15 and 16 December. On the first day nineteen bombers and twenty fighters attacked Chittagong airfield causing slight damage to the runway which, however, remained serviceable. Twelve Hurricanes intercepted and shot down two of the enemy. After dark on the same day, three enemy bombers again attacked Chittagong airfield, but no damage was sustained by either side. On the 16th Fenny airfield was the target for fifteen escorted enemy bombers and Chittagong for nine others. Ltttle damage was done and casualties were light but the air battles which took place were most unsatisfactory from the R.A.F. point of view. At Fenny, eleven Hurricanes were jumped by enemy fighters, owing to lack of height; four Hurricanes and two pilots were lost. Over Chittagong, seventeen Hurricanes were airborne but the only claim made was one enemy bomber damaged. Chittagong was again bombed on 20, 24 and 27 December by night by small formations of from two to four aircraft. Fenny too received a couple of small night raids on 23 and 28 December.

File AHQ(I) 79/1/Air Encl. 43A

45. Towards the end of December, 1942 the first air raids on Calcutta occurred. None of the raids was heavy and from the type of bomb used and the diversity of targets attacked, it would seem that they were more of a nuisance value than anything else. In all, five light raids were experienced on

(1) See Appendix 13, para. 20.

AHQ. Bengal DIS No. 104 27.12.42

the nights of 20/21, 21/22, 22/23, 24/25 and 27/28 December. The largest number of enemy aircraft taking part was nine and on no occasion were the enemy bombers escorted by fighters. During each raid the bombing was widespread but not heavy. The dock area received attention on each occasion and on Christmas Eve, bombs were dropped in the centre of the city. On the whole it would appear that the bombing was designed to create fear among the populace rather than to destroy any particular objective. Everything considered, casualties were light. Nevertheless, they were a sufficient incentive to those whose morale was not high to carry out a hurried evacuation. It may be assumed that this is exactly what the Japanese hoped would happen, especially if those affected were dock and industrial workers. The raids gave the authorities a good idea of what to expect of the civil population when subjected to air attack and confirmed the original opinion held that even light raids, providing they were maintained at frequent intervals, would cause serious dislocation of labour in Calcutta.

IIJ51/13/10 IG. Folder No. 10

46. The maintenance of air superiority over Calcutta was therefore essential if this vital Allied base was to function properly. But the air defence of Calcutta had to be attempted with Hurricane aircraft backed by an embryonic warning system. Until January, 1943 there were no specially equipped night fighter aircraft and as the Japanese raids were all by night they were not very seriously challenged by the R.A.F. A total of twenty-three enemy aircraft operated over Calcutta on the five nights. Operating on a "Cat's Eye" principle, Hurricanes made interceptions on three occasions, the result being one enemy aircraft destroyed and one probably so.

Ibid

47. The experience gained during the Rangoon air raids was repeated at Calcutta. No building of any substance collapsed and people taking cover inside houses were safe from anything except a direct hit. The high fragmentation of bombs dropped and the low trajectory of splinters caused casualties largely among persons who failed to take cover. The most serious effect of the raids was the exodus from Calcutta, estimated at 350,000 people, mostly low caste casual workers. There was no active panic but as experienced elsewhere, the refugees showed a quiet determination to get away. The exodus by no means killed the life of the city, few skilled workers evacuated and the mills and factories, generally speaking, kept on working although somewhat shorthanded. But the public services suffered most from the evacuation. The absence of cleaners left the city with piles of rotting rubbish in the streets; despite mid-winter the stench grew and there was a danger of Calcutta becoming a centre of an epidemic.

48. Total civilian casualties in the five raids amounted to approximately twenty-five killed and 139 injured. Little material damage was caused by bombs and the only target of military value that was hit was the oil plant at Budge-Budge and damage to this was very slight. It was evident, however, that if the raids continued the situation in Calcutta would deteriorate still further. Nor did the Japanese promise of bigger and better raids during the next moon period do anything to allay the apprehensions of the civil population. Thus an urgent appeal was made to the British Chiefs of Staff for specially equipped night fighter aircraft, an appeal which led to tangible assistance in the form of A.I. Beaufighters which arrived in Calcutta in mid-January, 1943.

Air Transport Operations

49. Throughout October, November and December, 1942 the R.A.F.

maintained a detachment of transport aircraft in Assam, first at Din Jan and later at Tezpur. The detachment, which was under the command of the Officer Commanding, No. 31 Squadron, comprised a few D.C.3s of No. 31 Squadron and two Hudsons of No. 62 Squadron. These Hudsons were later replaced by Hudsons of No. 194 Squadron. The first priority in supply operations was given to the task of garrisoning and provisioning Fort Hertz; second priority the supply of refugees still using the Hukawng route, particularly at Shingbwiyang; third priority was the supply by air of Army detachments and local levies in the Chin Hills, a commitment which became increasingly important.

File AHQ(B) S.12/Air Part II

50. The number of transport aircraft available was too few for the tasks allotted to them. 'Ad hoc' commitments arose with great frequency to the detriment of planned routine work. Moreover, operations were often interrupted by the absence of fighter escort which was considered essential owing to the very real danger of interception by enemy aircraft. When urgency out-weighed considerations of safety, transport aircraft operated without fighter escort and three Hudsons were lost through enemy action.

Ibid

51. There appears to have been some confusion in October, 1942 regarding the allocation of air supply resources. The Army in Manipur made many demands for emergency supply dropping in the Naga Hills and these tasks affected the supply of other areas. At the beginning of November much discussion took place between the Army and R.A.F. It was evident, however, that emergency supply dropping tasks could not be avoided and an understanding was reached with the Army that should they divert aircraft from routine tasks, they would do so on the understanding that the regular flow of supplies to priority recipients would be interrupted.

52. In the Hukawng Valley the situation had deteriorated and the appearance of 300 hostile Burmans at Shingbwiyang caused the commander of the tiny force there to retire into the hills and the sick refugees to move northwards. At Sumprabum a force of six officers and about 300 men were in contact with the Japanese; they were well supplied with arms but were very short of food. The Americans could not help very much as they were fully committed to the China run. Since the R.A.F. had insufficient air transport resources to meet all requirements the situation among the isolated parties of refugees in North Burma was, for a while, exceedingly critical. By 10 November, however, the supply dropping situation was under control. Fort Hertz was stocked and the position at Sumprabum satisfactory. Shingbwiyang had been temporarily evacuated but it was possible to drop supplies to its former inhabitants at two places not marked on any map, but adjacent to Shingbwiyang.

Despatch by F.M.Wavell Mar.-Dec. 1942 Supp. to London Gaz.

53. When the Japanese broke through to Lashio in April, 1942, part of the Chinese force in Burma was cut off from return to China and some of them tried to reach India. One division which had been operating with the British force reached Imphal in good order 6,000 strong. Part of the remainder of the Chinese Fifth Army eventually got through via the Hukawng Valley route to Ledo; others made their way north-east into Kachin country and returned to China by way of mountain tracks. All the Chinese troops that reached India were placed in a camp at Ramgarh where it was planned they should be re-equipped and trained by the United States forces. Towards the end of September, 1942, General Wavell received a request from Generalissimo Chiang Kai Shek that additional troops be flown from China to India to make up the force at Ramgarh to a complete corps. After training and equipment it was planned

that they should operate from India into North Burma. General Wavell accepted this proposal after approval by H.E. the Viceroy and H.M. Government. The Chinese troops were flown from China to India by American transport aircraft during October, November and December, 1942. By the end of the year the number of Chinese troops at Ramgarh amounted to approximately 30,000 of which 13,000 were flown over the "Hump". The air lift was carried out by twenty-four aircraft flying a regular air service and not one aircraft was lost in spite of the hazards of the "Hump" and the absence of fighter escort in an area where the enemy held air superiority.(1)

Passim

54. This two-way traffic over the "Hump" developed into a major strategic commitment. Materials of war were flown into China and vital raw materials such as Tungsten, in addition to personnel, were brought out on return trips. Beginning as a skeleton service, for in 1942 transport aircraft were not plentiful and the ground organisation immature, the air ferry was to grow into one of the greatest air supply achievements of the war.

55. On 1 September, 1942, the first "Hump" crossing by an R.A.F. aircraft was made. It began as a weekly service, primarily for the supply of the R.A.F. signals detachment in China, and remained thus throughout the period. The "Hump" route was essentially an American commitment.

Offensive Air Operations

ILJ50/47/I Misc. Reps. on Air Ops. May-Dec. 1942

56. In September, 1942 the efforts made to improve servicing began to show results. The weight of bombs dropped in September was twenty-two tons, in October fifty-eight tons, November 117 tons and in December, 1942 129 tons. Operations for bombers continued on similar lines as in the early summer. Blenheim squadrons sent forward up to twenty aircraft at a time to advanced landing grounds for attacks against enemy airfields and other strategic points in Burma. But owing to the great distances involved, it was an exhausting and uneconomical form of operations. When based at Asansol, light bombers had to make a 300 mile flight from base to advanced landing ground. Yet another refuelling stop had to be made at the A.L.G. before returning to base and this meant 600 miles of uneconomical flying on every sortie. It also meant that aircrews were flying two days out of every three since aircraft stayed overnight at the A.L.G., and ground crews had less time than was desirable for maintaining their aircraft. Nevertheless, the Blenheim squadrons succeeded in increasing their serviceability rate and with the approach of cooler weather, the whole position improved and morale rose rapidly.

Passim

57. During October, 1942, No. 34 (Blenheim) Squadron was withdrawn from operations over the moon period and given some training in night flying. These Blenheims, together with a handful of Liberator heavy bombers then available in the Command, carried out the first night attacks by these aircraft on Burma; this was on 17 November, 1942. Eight Blenheims of No. 34 Squadron attacked Magwe airfield in bright moonlight and on the same night four Liberators of No. 159 Squadron bombed the airfield at Meiktila. These attacks were highly successful and marked the beginning of the night offensive which continued thereafter on a scale varying with serviceability.

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(1) See Appendix 13, para. 22.

58. On several occasions our bombers were intercepted by enemy night fighters and several combats took place. Though no aircraft was lost over enemy territory during night operations, some aircraft, notably Liberators, were badly damaged and some personnel became casualties. The damage sustained by Liberators was in effect far more serious than might be imagined since they were often subsequently grounded for a month or more while awaiting repair or spare parts. The Liberators did not, therefore, operate very often during 1942 and the main burden of R.A.F. bombing operations once again fell to the Blenheim squadrons. During the period, however, the one Wellington squadron operated by night against enemy airfields and dumps. Blehheims operated by both day and night against a variety of targets such as airfields, supply dumps, troop concentrations, communications targets and shipping and on occasions they bombed targets close to our own lines at the request of the Army.

O.R.B. 221 Group Oct. - Dec. 1942

59. Other offensive operations by R.A.F. aircraft were carried out by fighters. In Arakan, Hurricanes flew rhubarbs and sorties against communications targets just to the rear of the front line; on the Manipur front Mohawks attacked enemy communications in the Chindwin Valley, co-operated with the Army in patrol work and escorted bombers on daylight raids over Burma. In all, R.A.F. Hurricanes and Mohawks flew 360 offensive sorties from October to December, 1942.

U.S.A.A.F. Hist. Narrative 1941-1942

60. By October, 1942, the American "India Air Task Force" had been sufficiently reinforced, B-24s taking the place of the older B-17s which had been sent to the Middle East, to broaden the scope of its activity. Small flights of bombers successfully attacked Rangoon on 5 and 9 November and on 20 November, eight B-24s carried out a damaging raid on the marshalling yards at Mandalay. The longest raid by B-24s took place on 26 November when eight of them took off from Bengal and flew a round trip of some 2,760 miles in a surprise attack on an oil refinery and power plant at Bangkok. The raid was repeated a month later by twelve B-24 heavy bombers. Rangoon remained the principal target for the American long range bombers, regular attacks being mounted against harbour installations and shipping there.

Clandestine Operations

IIJ50/47/32 Notes by Int. Branch H.Q. ACSEA. Jan. 1945

61. Following the success of the initial clandestine sortie in June, the Intelligence Branch of G.H.Q. India planned a series of operations of a similar nature to be carried out during the winter of 1942-43. Owing to the limited number of aircraft available, clandestine operations had to be based on the number of sorties which could be mounted by the R.A.F. and not on the number of sorties desirable. It was therefore the policy for Air Headquarters, India to arrange with the clandestine organisations the number of sorties to be flown, and the weight and bulk that could be dropped on each sortie. G.H.Q. India provided the equipment and personnel, and agents received, as far as possible, fourteen days training at the Air Landing School. But several factors severely handicapped the R.A.F.'s co-operative intentions. On 15 October, 1942, the Air Landing School moved from New Delhi to Chaklala (Punjab), some 1,300 miles from the advanced base of Dum Dum (Calcutta). This resulted in great difficulties since only one aircraft at a time could be sent forward and it was always problematical whether the solitary aircraft would be serviceable for operations.

File AHQ(I)

62. In addition to the first sortie in June, 1942, three others were flown during that year. These all took place in November and were all successful.

Operation Bat was mounted on the night of 19/20 November when two agents and 200 lbs. of supplies were dropped near Maymyo by a Hudson aircraft. The task of the agents, once installed in hostile country, was to report on troop movements by road and rail to Upper Burma, Myingyan and the Shan states and to report on the activity at Meiktila, Myittha, Sagaing and Myitnge landing grounds. Similarly, the task of agents dropped near Rangoon in operation Brass was to report the arrival and departure of troops to and from Rangoon, the movement of troops up country by road and rail and to report on enemy activity at Mingaladon airfield. Operation Brass was successfully accomplished on 22/23 November by a single Hudson which dropped four agents and 250 lbs. of stores. A few days later on the 25/26 at a dropping zone south of Gwa,(1) two agents were successfully dropped in an operation known as Brazen. This was the last operation carried out in 1942 by aircraft of the Air Landing School.

File AHQ(I) No. 5112

63. While the A.L.S. was grappling with the problem of providing facilities for clandestine operations in Burma, movements were afoot for a special operation to be carried out in Sumatra known as Minerva. It was planned that a Catalina flying boat should deliver a reconnaissance party of five persons to Sumatra. On reaching the Island the agents were to explore possibilities of assisting Allied prisoners of war to escape. On completing the reconnaissance it was arranged that one or more of the party should be brought back by a Catalina to report on the feasibility of further quasi-military operations in Sumatra.

Ibid

64. The first phase of operation Minerva was successfully completed towards the end of December, 1942(2) by a Catalina of No. 321 (Dutch) Squadron. Diversionary bombing though desirable was not possible but some measure of cover was provided by the bombing attack by Catalina aircraft against Sabang on 20/21 December.(3) The clandestine sortie was probably carried out between 22 and 27 December. It was a creditable achievement since there had been no previous experience of alighting in unknown waters off a hostile shore. After a flight of over 1,100 miles entirely over water, the Catalina of No. 321 Squadron landed off the coast of Sumatra, opposite Simalur Island, and off-loaded into rubber dinghies two officers, one of them an R.A.F. Squadron Leader, and three other persons. The Catalina then made an uneventful return flight to Ceylon.

General Reconnaissance

65. The activities of the flying boats based in Ceylon in April, 1942 has already been mentioned in Section IV of this narrative. From May until the end of the year very little of moment happened in the Indian Ocean. One or two enemy submarines were sighted by patrolling Catalinas but no attacks were made. The G.R. squadrons, however, fulfilled a vital if unglamourous role of patrolling the vast expanses of the Indian Ocean, providing air cover for the many convoys and unescorted ships which plied between South Africa and India, up and down the east and west coasts of India and between Australia and Ceylon. Long over-sea reconnaissances were

(1) On the west coast of Lower Burma west of Henzada.

(2) The exact date of the sortie is not known since stringent security measures were observed at the time and no records now available give precise details of the operation.

(3) See account of operation Pages 71-72.

the sole province of Catalina aircraft based in Ceylon, Madras and Karachi, while two Hudson squadrons kept watch over the Bay of Bengal and along the Burma coast.

66. Submarine activity was on a small scale though some merchant ships were torpedoed. The most evident achievement of the Catalina squadrons was their valuable work in locating ships in distress and guiding rescue ships to pick up survivors.

O.R.B. H.Q. 222 Group Oct.-Dec. 1942

67. During December, 1942 an air route from Ceylon to Australia was surveyed in anticipation of a regular air service. A Catalina of No. 321 (Dutch) Squadron was chosen and taking off on 16 December, flew to Exmouth Gulf in 26 hours, a distance of 2,650 miles. In order to investigate whether it was feasible to use the Cocos islands as a refuelling base, thereby increasing the pay-load on trans-Indian Ocean flights, the Catalina called there on the return trip from Australia. The Japanese, however, were paying some attention to the islands and in addition to flying reconnaissance aircraft over the islands at regular intervals, they had mounted a light bombing attack on 6 December. It was therefore decided that the Cocos islands would not be used except as an emergency base because it was thought that the enemy might be tempted to occupy them if it became known that the Allies were using them as a base. The result of an enemy occupation would have been the loss to us of a valuable cable station. Early in 1943 a regular Ceylon-Australia air service was inaugurated by flying boats which made the flight in one hop.

68. Catalinas based in Ceylon took on another role in December, 1942 when three of them attacked targets in northern Sumatra. After the Japanese attacks on Ceylon in April, 1942 the Eastern Fleet retired to East Africa. Towards the end of the year the Americans planned to launch an offensive in the South West Pacific Area and to assist them it was necessary to convince the enemy that the Eastern Fleet was still a potent force and still operating in eastern Indian Ocean. Thus the Catalina raid on Sumatra had to appear as if carrier borne aircraft were operating and after the attack broadcast propaganda was put out to this effect. Two Catalinas successfully bombed Sabang harbour installations on the night of 20 December and one Catalina bombed Kota Raja town. All aircraft encountered stiff A.A. opposition and one Catalina was badly damaged. The aircraft actually hit the water while taking evasive action and bounced off; one of its engines was put out of action and remained so for the whole seven hours or more of the return trip to base. Landing down wind, out of petrol and with its wing floats out of action, the Catalina successfully reached base after a return flight of over 1,000 miles.

Summary of Air Operations March to December, 1942

69. Air operations during the period March to December, 1942 were rather inconclusive. That little was achieved might well be due to the fact that the air forces had few weapons to wield and eastern India in 1942 could hardly be called a suitable base from which to wage an air war against a major power. There is no doubt, however, that the air forces made a brave show against considerable odds. When judging their achievements sight should not be lost of the fact that conditions in India were extremely bad; the summer heat and monsoon rains were the worst experienced for many years, medical services could not adequately deal with the many problems which arose, food was bad and lacked variety, civil

disobedience interfered with communications and finally, the air forces were obliged to work with the minimum of tool kits and equipment. Moreover, the base maintenance units, upon which the efficiency of combat formations depended so much, had not begun to function properly.

70. For the benefit of those unacquainted with the uncertainties of the weather in this theatre of war, it should be mentioned that air operations were usually limited to the dry season. During the period of the monsoon, which normally establishes itself over eastern India in May or early June, land fighting was greatly impeded by the extreme difficulty of movement and air operations were often curtailed owing to the unserviceability of all but the few all-weather airfields and to the impossibility of flying at all on the stormiest of days. A word might be added as to certain further conditions that are likely to surprise those whose experience of warfare has been confined to the European theatre. The main bases of our aircraft in the plains of Bengal and in the Brahmaputra valley were scattered over a prodigious extent of countryside and were thus separated by distances far greater than was normal in Europe. Paddy fields and palm trees are the chief ingredients of the countryside whose inhabitants are unfamiliar with the ways of the west, speak no English and regard the mechanical triumphs of the west - in so far as they came their way - with a philosophic indifference punctuated by a keen eye for the main chance. Flies by day and mosquitos by night were omnipresent nuisances and dangers for they carried dysentery and malaria. Since until 1941 any potential threat to India was envisaged as coming from the west, no attention was paid to the development of Bengal as an air base and preparations for waging war from this unlikely terrain had to be started from scratch. Materials ready at hand were exploited as far as possible. Technical services struggled against great odds; the telephone system, whose vagaries sent the newcomer into a frenzy, was in fact a creditable achievement on the part of the signals personnel. The control of operational aircraft thus presented problems of peculiar complexity.

71. From April to December, 1942, the R.A.F. flew a total of 3,791 sorties and lost eighty-one aircraft in doing so. The Americans lost five aircraft in the course of 782 sorties. Of the R.A.F. total, 276 sorties were flown in defence of India and Ceylon; sixty-five enemy aircraft were claimed as destroyed, twenty-eight probably so and fifty-three as damaged. About half of these were claimed during the attacks on Ceylon in April (See Section IV). The enemy flew 719 sorties against targets in India and Ceylon, made up of 247 fighter sorties, 384 bomber and 88 reconnaissance.

72. The Hurricanes and Mohawks which comprised the fighter equipment of the R.A.F. could not match the performance of Japanese aircraft but skilful piloting and determination enabled them to inflict substantial losses on the enemy though a considerable number of fighters were lost in doing so. The fact remains, however, that the enemy's air attacks on eastern India were not seriously challenged by the air forces, he was able to reconnoitre at will over the whole battle area and he could penetrate as far west as Calcutta without sustaining serious losses. Though the R.A.F. made a gallant bid to wrest air superiority from the Japanese, the year ended with the issue undecided. But defence was not the only role of the fighter squadrons since they also mounted some 476 sorties in offensive operations.

73. It does not seem likely that our bombing attacks had a very damaging effect. The main R.A.F. effort was directed

mainly against enemy airfields and this form of attack needs to be heavy and sustained to impede seriously an enemy air force. But the nuisance value of these raids was quite out of proportion to their weight. So short was the enemy of reserve aircraft that he took great pains to protect his machines and this made R.A.F. raids far more effective than might have been the case.(1) The enemy air force was thus restricted and hindered but not destroyed. The best weapon for destroying enemy aircraft on the ground was the long range fighter, but in 1942 no such aircraft were available to the R.A.F. The second priority target for R.A.F. bombers comprised enemy lines of communication in Burma and some valuable work was done in these attacks. It is unlikely, however, that the weight of bombs dropped on these targets caused much more than a slight hindrance to an enemy who was adept at utilising local resources for the major portion of his needs. The R.A.F. air striking force, from April to December, 1942, mounted 942 sorties and dropped 473 tons of bombs on enemy targets. In the same period the U.S.A.A.F. bombers flew 299 sorties and dropped 413 tons of bombs.

74. Perhaps the greatest significance of air operations carried out during 1942 was the potentiality of air supply in jungle country. While air transport was not greatly developed, much valuable experience was gained. Only a tiny air transport force operated and yet the R.A.F. flew 543 sorties from April to December, 1942 and transported 680 tons of supplies. The inhospitable nature of much of the country over which these aircraft operated and the tenuous lines of communication that existed throughout the whole theatre, provoked considerable food for thought in the use of air supply. Efforts made to carry supplies overland across the Naga Hills proved unavailing and the resort was to drop supplies by parachute. This expedient was first employed on 9 May, 1942 and was of immediate assistance to the Chinese troops lingering in the Hukawng valley as well as refugees escaping to India. It was at this time also that transport aircraft began similarly to supply the air warning posts being established in the Naga Hills to screen the bases in the Brahmaputra valley. Special equipment for supply dropping was difficult to obtain so that these operations on the Burma frontier were at first characteristically experimental. The dropping zones in these early days were of the poorest, being little larger in size than a tennis court, but at least they provided excellent practice in the art of accurate dropping.

75. Although the crew of a transport aircraft might have what at first sight seems a less spectacular task than their colleagues in bomber and fighter aircraft, nevertheless their work required no less courage, skill and endurance. Their missions took them to emergency landing grounds where any momentary miscalculation on the part of the pilot might have led to the loss of an aircraft and its much needed cargo of food and ammunition. When transport aircraft could not land but had to drop its supplies, either free or by parachute, the task was no less dangerous for supply dropping was a gradual and complicated process. The aircraft had to fly at minimum height and speed during the tiring business of unloading. The difficulties of operating on the Burma front were also increased by the treacherous lie of the land and pilots trained in wide open spaces soon had to adjust their technique to dropping zones located in narrow valleys, jungle clearings and odd hollows in the hills. For a transport aircraft to complete an accurate drop it normally had to make eight to ten

(1) See Appendix 13, para. 6.

circuits over the dropping zone and unless the pilot was expert and the crews worked at high speed and the zone free of obstacles, further circuits had to be made; a dozen or so were commonly necessary. Thus aircraft had to remain up to three quarters of an hour and more, helplessly flying at minimum height and speed, over areas in which enemy aircraft were often operating. Under such circumstances it could only be expected that whatever fighter escort and however effectively air superiority was enforced, some transport aircraft would inevitably be lost. Fortunately, the enemy failed to take advantage of the situation. Another danger to transport aircraft was the accurate small arms fire from Japanese troops ensconced near dropping zones for whom a large transport aircraft flying slowly at the lowest of altitudes was an excellent target.

76. Apart from provoking intense activity on the part of the few R.A.F. aircraft available, the Japanese conquest of Burma might have had a catastrophic effect upon Allied fortunes in the Far East had it not been for air supply. For just as the fall of Singapore had blocked the sea route from the west to China, so had the Japanese occupation of Burma closed the land highway. For the future the armies of Chiang Kai-Shek were dependent exclusively upon airborne supply which alone could enable them successfully to resist the Japanese. But a detailed description of the Americans' prodigious achievements of air supply over the "Hump" lies beyond the scope of this narrative. It is sufficient to say that without American lend-lease supply transported into China by aircraft of the U.S.A.A.F., it is conceivable that China would have been knocked out the war.

77. To sum up the period March to December, 1942, it can be said that the effort of the R.A.F. was mainly directed to the task of building up the air arm rather than of air effort against the enemy. In March, 1942 the R.A.F. was an enfeebled, unprepared and obsolescent force of a few worn out squadrons. By December, 1942 it had grown into a force which could give some measure of protection to North-east India and Ceylon and could thenceforth carry the offensive war into enemy occupied territory with increasing vigour. More important still, the modest beginnings of air supply had illustrated its potentialities, a factor which was profoundly to influence the planning of future campaigns in the theatre.

SECTION VII

OPERATIONS DURING THE DRY SEASON DECEMBER 1942 TO JUNE 1943

Overall Strategy

1. The British Chiefs of Staff in 1942 decided that there were five courses of action, the prosecution of any one of which, would ultimately destroy Japan's ability to continue the war. These were:-

JPS(42)537
30.5.42

(a) Occupation of the industrial areas and sources of raw materials in Manchukuo, Korea and North China

(b) Complete severance of sea communications between Japan and North China and Manchukuo through the Yellow Sea

(c) Heavy and sustained bombing of industrial areas in Japan from shore bases

(d) The re-capture of the sources of oil in Sumatra and Borneo

(e) Complete severance of sea-communications between the Netherland East Indies and Japan.

The first three courses were thought to be dependent upon Russian participation in the Far Eastern War. The fourth could only be achieved by very large scale combined operations and considered to be beyond the resources of Britain until Germany had been defeated. The fifth course was dependent upon naval and air superiority.

COS(42)13(O)
13.1.42

COS(43)33(O)
28.1.43
"SYMBOL"
C.C.S. Paper 168
22.1.43

2. At the Arcadia conference at Washington in Dec. 1941 the combined Chiefs of Staff agreed on a military policy for the conduct of the war as a whole, to "Defeat Germany whilst holding Japan". It was important, however, that Japan should be prevented from conserving her forces while Great Britain and the United States were still engaged in fighting Germany. Had the Allies remained strictly on the defensive in the Far East, Japan would have had time to replenish her stocks of oil, strengthen her defences in newly acquired territories and increase the capacity of her aircraft and shipbuilding industries which were the weak links in her armour.

3. Japan's emergence from medieval culture had been fairly recent. While she had made rapid mechanical and technological strides under governmental direction, the great mass of the Japanese people had not been associated from birth with the products or processes of industrial civilisation. Hence her industrial organisation had no depth. This made her training problem a difficult one; she was forced to conscript agrarian peoples and plunge them into occupations and activities for which they were ill prepared. This condition also put a high premium on both civilian and military components who were trained up to a satisfactory level of proficiency. Once lost they were irreplaceable. From the standpoint of war economy and industry, Japan was in a very precarious geographical position. Her basic industries were concentrated largely in her home islands, while the bulk of her natural resources lay almost exclusively in the Netherland East Indies, North China and Manchuria. To connect the industrial facilities and the raw

materials, Japan had to establish and secure sea lines of communication which were long, tenuous and vulnerable. Japan's geographical position with respect to her war economy was so weak and her industrial potential so far below that of her opponents that, at best, she could plan only for a war of short duration and limited objectives. Thus the immediate objective of the Allies was to isolate Japan's outlying territories until such time as the full weight of Allied armed might could be brought to bear against the Japanese.

4. The Allied conception of strategy in the Far East was based on the assumption that Japan could not be defeated until 1947 or 1948. The Pacific strategy of island hopping was untested and might not be successful. It was believed necessary, therefore, that China should receive supplies in order to give Chiang Kai-Shek sufficient psychological ammunition to over-rule collaborationist factions in China. If American lend-lease supplies to China stopped, it was assumed that China would cease fighting. China was wanted as an air base whence the enemy sea communications in the China Sea could be attacked and perhaps, ultimately, as an Allied base for the invasion of Japan itself. On the one hand it could be argued that there were few Chinese forces capable of taking the field against Japan, that we could expect little military help from China and that even if China made peace with Japan, the latter would be unable to withdraw many of her land forces from the Asiatic mainland. On the other hand there were grave political drawbacks in allowing China to go out of the war, drawbacks which perhaps it would be profitless here to define since their considerable complexities lie within the province of purely military history. It is sufficient to quote Winston Churchill who in June 1942 said ".....but having regard to the immense disaster which the falling out of China would spell it seems only prudent to get everything moving in aid of the Chinese subject to the conduct of the war" (against Germany).

COS(43)33(0)
28.1.43
"SYMBOL"
Conference

5. Briefly, a decision was made to keep China in the war but the problem remained of keeping her supplied with materials. Although air supply over the "Hump" had been instituted as a temporary method, the re-opening of the Burma Road was considered to be the only way of affording China material aid. To open the Burma Road, Burma would have to be re-occupied and this necessitated control of the Bay of Bengal, a major combined offensive against Rangoon and an offensive into Upper Burma from Assam, operations which were beyond the resources of Britain in the winter of 1942-43. There were possibilities of other operations, however, which might assist China. In 1941 work had been started on the building of a road from Ledo in Assam to Myitkyina in Burma. After the fall of Burma in 1942, the Americans took over the construction of the road with the intention of pushing a land route through North Burma to link up with the old Burma Road at some point beyond Myitkyina. The construction of this road was dependent upon the re-occupation of North Burma as far as an approximate line Myitkyina - Bhamo - Lashio.

Despatch by
F. M. Wavell
Jan.-Jun. '43

File COS/
32467
Wavell to
CIGS 23rd
Dec. 1942

6. It was planned that during the winter of 1942-43, General Stilwell's Chinese forces at Ledo should advance towards Myitkyina while the new Chinese armies in Yunnan, which were being raised, moved on Lashio. At the same time the British IV Corps at Imphal was scheduled to advance to the Chindwin river and establish positions between Kalewa and Sittaung. The Long Range Penetration Brigade of Brigadier Wingate was to infiltrate deep into enemy

territory, cut communications and harass the enemy in order to assist the primary operations - the re-conquest of North Burma. In addition, a separate operation was to be carried out against Akyab in Arakan, ostensibly to provide an air base for use in conjunction with future operations in Lower Burma. Stilwell intended to launch his attack in January 1943 expecting the Yunnan force to be ready to advance in strength on 1 March. But Yunnan did not come up to scratch in time and it is said that for some unaccountable reason, Generalissimo Chiang Kai-Shek refused Stilwell permission to advance.

A.M. File CS.23333 F. M. Wavell

7. For Field Marshal Wavell as Commander-in-Chief, there were other limitations. Besides the strength of the enemy and the weakness of the British-Indian forces, the political situation was unfavourable for any considerable commitment on the eastern frontier. The failure of the Cripp's Mission to bring the Indian Congress wholeheartedly on the side of the Allies imposed on the C-in-C. the duty of distributing his strength, not only in defence of the 700 mile India-Burma frontier, but at strategic points along India's 4,000 mile coast-line. Moreover, the administrative problems of supplying the troops and air forces in Manipur were considerable. The lack of road making materials, transport and other difficulties made it necessary to postpone operations against Kalewa and Sittaung. When it was found that the Chinese troops in Yunnan had no intention of moving, the strategic basis of a IV Corps advance disappeared and in the end operations on the Manipur front were confined to strong offensive patrols.

Passim

8. Since no major Allied offensive could be mounted in Burma during the winter of 1942-43, the role of our combat troops was confined to two separate and small scale offensives. On the air side, apart from supporting the two land campaigns, an independent war of attrition was to be waged throughout 1943. The first land offensive was an attempt to retake the Mayu Peninsula and the island of Akyab, an operation sometimes known as "The First Arakan Campaign 1942-43". It set out to the accompaniment of widespread publicity that the purpose was nothing less than the invasion of Burma, it ended in an equally exaggerated failure. The second offensive, which had no strategic objective, was the long range penetration of Brigadier Wingate's troops who marched over 200 miles into the heart of enemy held territory. This campaign, approximately known as Expedition, was launched and completed in secret but it subsequently received world wide renown. Neither operation had any immediate consequences. The aim of the Akyab thrust was restricted to the capture of the port and air-field there, while the Wingate intruder march was not followed up by larger forces. Each operation was on a small scale and if one was more successful than the other, much experience was gained from both, though not before several minor disasters had befallen our troops.

SEATIC No. 242 (Based on translation and interrogation reports)

9. Wavell's main reason for mounting offensive operations at a time when his resources were few and the time hardly ripe was based on the assumption that if he did not do something, the Japanese would develop offensive intentions against India. During the monsoon of 1942, the possibility of invading India was seriously considered both at Imperial Headquarters, Tokyo and by the Japanese Headquarters in the Southern Regions. The idea was finally rejected at the end of 1942 because of the immense problem of supply and insufficient resources for the conduct of

offensive operations in both Burma and the South West Pacific (See pages 12 and 13). The Japanese, therefore, planned to mount expeditions in the Sumprabum, Bhamo and Chindwin areas for propaganda and pacification purposes, plans which were thwarted by the small Allied offensives in Burma.

SECTION VIII

THE FIRST ARAKAN CAMPAIGN DECEMBER 1942 TO MAY 1943

Plans

JPS. Paper No. 49 - 6.1.43

1. Operations in Arakan during the dry weather season of 1942-43 had only a limited objective - the capture of Akyab Island. Akyab served the Japanese in Arakan as Chittagong farther up the coast served the British-Indian forces; a reception centre for troops and supplies and as an advanced air base. The first Arakan campaign was related to the general policy of placing our forces in favourable positions in anticipation of more ambitious offensives in the winter of 1943-44. Thus in Arakan the object was firstly to gain additional forward landing grounds, regarded as essential for the support of later operations in Lower Burma and secondly, to seize points from which Allied forces could ultimately be moved across the Arakan Yoma into the interior of Burma. As a more immediate object it was thought that Akyab would meet the need for an air base nearer important targets in Burma whence our aircraft, with their limited range, could strike the enemy with increased vigour during the monsoon.

2. The capture of Akyab had originally been planned as a sea-borne expedition for which the British 2nd Division had been specially trained. The 14th Division was to make a diversionary advance down the Mayu Peninsula from Chittagong while the 2nd Division made an amphibious assault against Akyab island. Unfortunately, the necessary resources for the landing operations were not made available; India Command was low on the list of priorities and at the time amphibious operations were being conducted in North Africa and later in Sicily which precluded the provision of landing craft for India. Moreover, one brigade for the Arakan operation was to have come from Madagascar but as many of the troops were suffering from malaria after operations there, they were sent to South Africa to recuperate instead. This state of affairs was most unfortunate since operations against Akyab had every prospect of success if carried out with speed at the end of 1942 or in January 1943. The enemy strength in Arakan was very weak indeed. After the Burma campaign of 1942, elements of the Japanese Army had advanced along the coast and occupied Akyab. A battalion took up garrison duties at Rathedaung and another at Donbaik. Small detachments were sent into Maungdaw and Buthidaung.

IIJ/54/8 SEATIC No. 243 Oct. '43

Despatch by F. M. Wavell Jan.-Jun. 1943

3. In spite of the absence of troops and equipment with which to mount a sea-borne invasion, Field Marshal Wavell was unwilling to give up the attempt to capture Akyab, particularly as it was essential to restore the morale of British-Indian troops by a decisive defeat of the enemy in battle. He considered that it might be possible to capture Akyab by a rapid advance down the Arakan coast by 14th Division to the southern end of the Mayu Peninsula and then launch a short range assault in the few landing craft available and in local vessels. The essential factor in the advance was speed so as to reach Akyab before the Japanese could reinforce the island and strengthen its defences.

Ibid

4. There were, however, serious obstacles to a rapid advance owing to the nature of the country and its communications. The campaign had to be conducted in very narrow terrain the topography of which can be dealt with in a few words. Arakan is a land of steep little hills covered with jungle, of paddy fields, scrub and swamp. North of Akyab the Mayu Peninsula, where most of the fighting took place, sharpens to a tip called Foul Point. The Peninsula is split by the Mayu range, rising to 1,500 feet, which is flanked by low lying foot hills. The country on either side of the range is exceedingly narrow and since these flat areas of land are intersected by innumerable tidal creeks, it was impossible to deploy troops in strength. There were no road communications other than those that could be made as the advance progressed and this entailed a great deal of bridging. Forward echelons, therefore, had to be organised on a pack transport basis which caused confusion in the 14th Division, trained as a mechanised formation. Sea communications were hampered by the nature of the coast line which offered no landing facilities except within the Naf and Mayu rivers, and they could only be used as their mouths were secured by an advance. Supply by air, which would have solved most difficulties, was out of the question since the few aircraft available for operations on the eastern frontier were fully engaged in supplying isolated detachments in the Chin Hills and also the Wingate expedition which began in February 1943.

WIJ51/28 Operations by 224 Gp. Jan.-Jun. '43

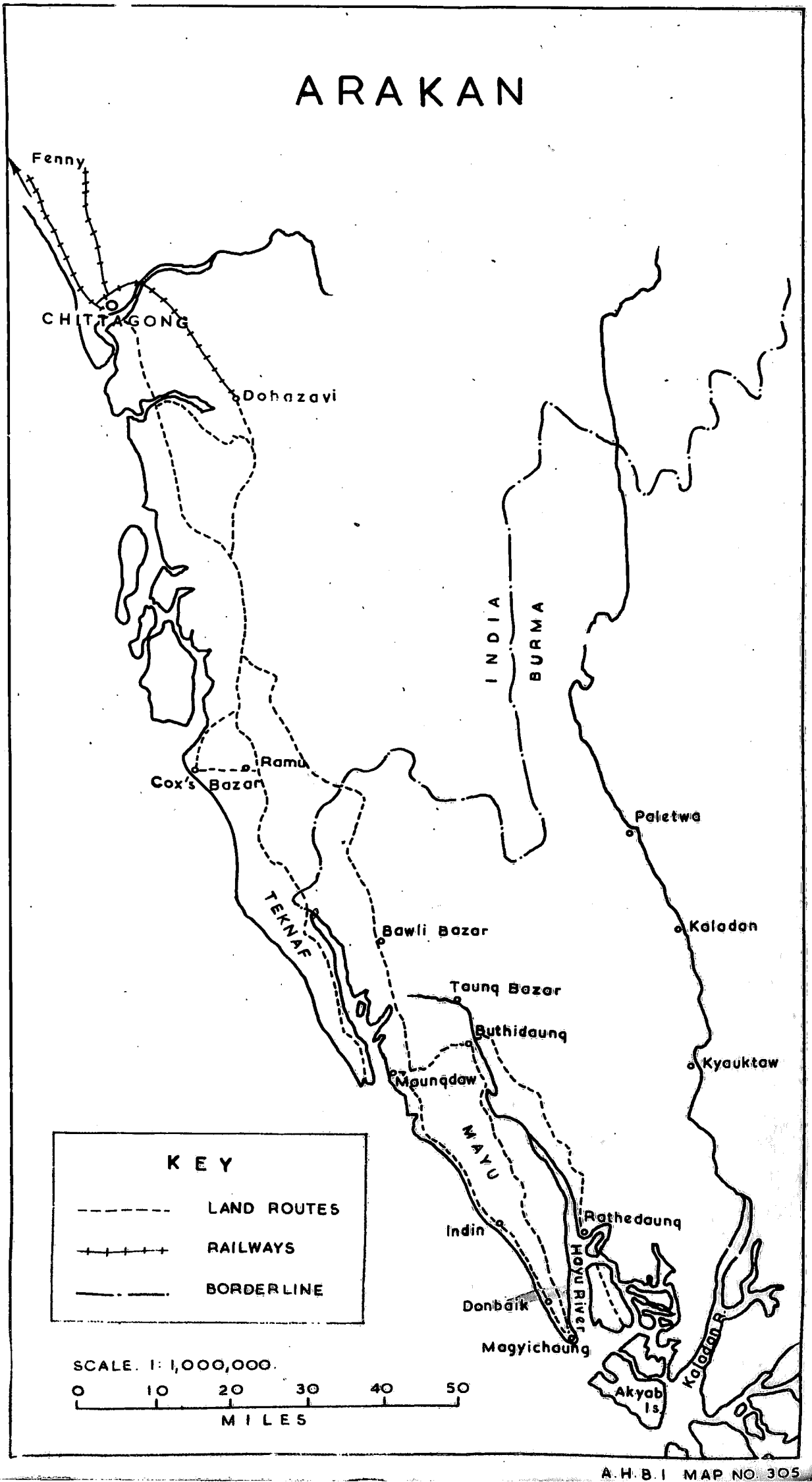
5. Air Support for the Arakan campaign was provided by Headquarters No. 224 Group which moved from Calcutta to Chittagong in December 1942. It was also planned that at the same time R.A.F. squadrons should move forward from the Calcutta area, but owing to some delay in preparing fair-weather strips in Arakan, the deployment was not completed until January 1943. Available(1) for operations in Arakan were five Hurricane fighter squadrons, one Mohawk fighter squadron, three Blenheim light bomber squadrons and a flight of Lysanders for tactical reconnaissance. This force remained constant throughout the campaign except that the Lysander flight was replaced in January 1943 by a flight of tactical reconnaissance Hurricanes, while some Hurricane squadrons were exchanged with others in the Calcutta area. Two Hurricane squadrons were located at Ramu (sixty miles south of Chittagong), two at Chittagong and one fifty miles further north at Fenny. The Lysander flight was at Chittagong and when replaced by Hurricanes, the latter were moved south to Maungdaw. Two Blenheim squadrons were based at Fenny and one at Dohazari (near Chittagong).

Land Operations

Despatch by F. M. Wavell Jan.-Jun. '43 A.M. File CS.23333

6. When the Arakan campaign opened the enemy held Maungdaw and Buthidaung with light forces. Just as our troops were about to attack these two places the enemy withdrew and Maungdaw was occupied on 16 December and Buthidaung on the following day. The 14th Division then followed up on a two brigade front, one brigade moving down the coast and the other east of the Mayu River. By 27 December, Indin had been occupied and a patrol had actually rounded Foul Point and reached Magyichaung. By the same date the second brigade had arrived opposite Rathedaung and a patrol reported it clear of the enemy, although this cannot have been correct as subsequent events were to show. At this time it appeared that the enemy had no intention of holding the Mayu Peninsula and had our troops pushed on at once the whole Peninsula might have been secured.

(1) For details of squadrons see Order of Battle at Appendix 2 Page 3.


ARAKAN
Fenny
CHITTAGONG
Dohazavi
INDIA
BURMA
Ramu
Cox's Bazar
TEKNAF
Bawli Bazar
Paletwa
Kaladan
Taung Bazar
Buthidaung
Kyauktaw
Mayu
Indin
Rathedaung
Donbaik
Hayu River
Magyichaung
Akyab Is.
Kaladan R.
KEY
LAND ROUTES
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0 10 20 30 40 50
MILES
A.H.B.I MAP NO. 305

7. There now occurred an unfortunate delay of some ten days. It may be that the urgency of the situation was not fully realised and that troops should have been pushed forward in spite of all difficulties to take advantage of the favourable tactical position. The brigades, however, were operating at the end of a very tenuous line of communication some 150 miles from the railhead, and some unseasonable rain had rendered roads and tracks temporarily impassable. When the advance continued on 6 January the enemy had constructed strong defences in the Donbaik area and at Rathedaung, positions which were repeatedly attacked without success. But administrative problems again hampered the offensive since supply and reinforcement was slow along the hastily constructed road which was continually put out of action by rain. Supply by sea could not alleviate the position as there was a lack of vessels of a suitable size and draft to enter the anchorages at Cox's Bazaar and Maungdaw.

IIJ54/8
SEATIC No. 243 Octbr. 1946

8. The enemy Commander-in-Chief in Burma called upon the Japanese 55th Division to restore the balance in Arakan by destroying the advancing British-Indian forces. The enemy Division, which was concentrated in Lower Burma, began its move into Arakan in January and by 4 February the main body had assembled on the east bank of the Mayu River below Rathedaung. In addition to reinforcing Arakan the enemy erected strong defences on Akyab island itself. Thus it seemed improbable that the British-Indian forces would be able to clear the Mayu Peninsula in time to deliver the assault on Akyab before the monsoon set in. In any case the slow progress made by our forces had given the enemy plenty of time to make full preparations to defend all likely landing places on Akyab Island. General Irwin, who was in direct command of the British-Indian forces, recommended to Wavell that defensive positions should be prepared and that the attempt to secure the Mayu Peninsula should be given up. Wavell, however, refused to do this without first obtaining a marked success over the enemy so that the troops would henceforth be confident in their ability to beat the Japanese in jungle warfare. He therefore gave orders to attack the Donbaik position with two brigades, the intention being that the attack should be delivered in strength and depth in order to swamp the Japanese positions. But the enemy had dug-in and their cleverly camouflaged fox-holes, which were safe from anything but direct hits by artillery or bombs, held firm and our attack failed.

Despatch by F. M. Wavell Jan.-June 1943 A.M. File OS.23333

Ibid

9. On 5 March 1943 the enemy began his counter attack up the east bank of the Mayu River and across the hills and he succeeded in taking up positions behind our own troops on the Rathedaung front. We were forced to withdraw from Rathedaung and at Donbaik, after the failure of our attack on 18 March, troops of the 14th Division had to extricate themselves from dangerous positions brought about by Japanese envelopment tactics. Bitter fighting took place with heavy losses on both sides and by the middle of April, the 14th Division had been forced to withdraw to positions covering Maungdaw.

10. Some of the troops of the 14th Division were weak and tired and many units were below strength owing to battle casualties and disease. The 26th Division therefore took over most of the front from 14th Division. Though reinforcements took some time to settle down to the abnormal conditions of jungle fighting, Wavell still hoped to regain the initiative and he gave orders for the troops to take up positions covering Maungdaw-Buthidaung road, the Maungdaw

airfield and the Naf River for the monsoon. But we failed to regain the initiative and in fact lost our positions at Maungdaw and Buthidaung. The Japanese continued their tactics of infiltration against our communications with marked success and by the time the monsoon broke, the British-Indian forces in Arakan were back approximately in the same positions from which the advance had begun five months earlier. The enemy, who was also suffering from maintenance difficulties, withdrew to the Maungdaw-Buthidaung line which he had held at the beginning of operations. This ended land fighting except for small patrol enterprises.

Air Operations in Support of the Arakan Campaign

IIJ51/28 Operations by 224 Gp.

11. During the campaign, R.A.F. fighters were mainly employed in low-level attacks against ground targets, both in direct and indirect support of the land forces. Though their most important function was the maintenance of air superiority over the battle areas, the interdiction of enemy lines of communication and communications targets in Arakan to a depth of 200 miles inside enemy held territory, absorbed most of their effort. Fighters were also employed in escorting Blenheim light bombers. The latter were used extensively for bombing operations in the battle area and on main focal points on enemy lines of communication.

AHQ.Bengal O.R.B. Dec. 1942

12. The R.A.F. began their attacks on the enemy in Arakan at the beginning of December 1942, particular attention being paid to communications and troop concentrations in the hope that the advance of the 14th Division might thereby be assisted. Enemy reaction to our attacks took the form of Japanese air raids against our airfields in the Chittagong area.(1) Three such attacks were made by the enemy. Chittagong was raided twice on 15 December and on the following day the enemy attacked Chittagong and Fenny. The damage sustained in these attacks was very small and casualties were very light. There was, however, some evacuation of native labour. Interception by Hurricanes took place on two occasions and we lost four Hurricanes in shooting down two of the enemy.

IIJ50/47/8 Report by A. V. M. Williams AOC. Bengal Command

13. Throughout the advance of the 14th Division down the Mayu Peninsula air support operations were carried out by the R.A.F. at maximum effort. Blenheim bombers attacked villages in the Mayu Peninsula and bombed Akyab town with regularity while Hurricanes ground-strafed enemy positions and harassed his communications. The nature of the country forced upon the R.A.F. a new form of air warfare - the attack of unseen objectives. Such targets, generally reported concentrations of enemy troops in the jungle, were indicated to pilots by pin-point positions or by smoke shells fired by our artillery. These operations were, however, most unsatisfactory from the point of view of aircrews as they seldom ascertained the results of their efforts, but according to Army reports these bombing attacks were most effective. But the greatest success achieved by the R.A.F. lay in attacks on enemy communications in the battle area. The enemy relied to a large extent upon the innumerable waterways which intersect the Arakan coast, and his rivercraft and coasters provided the Hurricanes with excellent shooting practice. Within a very short period, movement by water in daylight and movement on the more clearly defined land routes was stopped. The R.A.F. then directed some of their effort

(1) See Section IV Page 65.)

to attacks by moonlight on communications targets with considerable success.

14. Until the middle of March 1943 the enemy air force could seldom be contacted. On the few occasions the Japanese did cross our lines, lack of information regarding heights of enemy aircraft and the bad tactical position of our fighters made interception a matter of chance. In March this difficulty was overcome by an improvement in the warning system and the introduction of VHF in all fighters which permitted increased clarity in speech and range from ground to air and between aircraft in different formations. The Japanese air offensive,(1) which began in mid-March marked the moment when their ground forces began their counter attack. The Japanese first bombed our advanced airstrips in a determined attempt to push our fighters back and so deprive the British-Indian forces of air cover. In this they achieved some measure of success since a considerable portion of our fighter strength had to be diverted from offensive operations to the defence of airfields and installations. After the attacks on our airfields the enemy turned his attention to the bombing of communications centres at Chittagong, Doharazi and Comilla but again he achieved little. He also mounted attacks against out forward troops but these raids did not constitute a serious threat and our land operations were hardly affected by them.

Telegram No. 11°Wavell to CIGS 15.4.43

AHQ. Bengal O.R.B. May 1943 App. "A"

15. The intensification of the war in Arakan and the advance of the Japanese Army, lengthened the enemy's lines of communication and placed increased burdens on the already difficult routes by which his Army was being reinforced and supplied. Japanese routes in Burma had to follow natural lines of communication and all indications pointed to Prome as being the base for Arakan. From there the route followed the Prome-Taungup pass, which was motorable, but from Taungup the nature of the country was such that reinforcements and supplies had to be carried by various stages of boat and road and the journey finally completed by coastal or rivercraft. Similarly the Irrawaddy valley was used as one of the routes for supplies to the Chin Hills area. Here most of the traffic was carried by boat for the entire journey and a number of storage dumps had been established at key points on this communications system. In order to assist in the final stages of the Arakan campaign it was planned that the R.A.F. and U.S.A.A.F. should carry out a series of concentrated attacks by day and night on these main lines of communication and on all known communications centres, dumps and other points of assembly on the approaches to Akyab and the Mayu Peninsula. The U.S.A.A.F. agreed to attack targets east of the Irrawaddy valley; targets to the west of this line were to be attacked by 224 Group by day and night as opportunity allowed and by 221 Group by night. No. 221 Group was instructed, however, to spread its attacks throughout the hours of darkness. Thus operation Wimpole, which lasted from 18 to 20 May, consisted of concentrated bombing and strafing of enemy supply bases, shipping and rivercraft, of his bridges, road and rail transport by day and night.

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(1) For a detailed account of the battle for air superiority see Section X.

16. During the operation the U.S.A.A.F. mounted 132 sorties with B-24 and B-25 aircraft against targets in the Irrawaddy valley in the course of which they dropped 330 tons of bombs. At the same time the R.A.F., concentrating more on fighter sweeps, flew some 415 sorties and dropped fifty tons of bombs. Perhaps the most effective of R.A.F. attacks were the sweeps by Beaufighters and Hurricanes along the roads and waterways north and south of Akyab. On 18 May, eight Beaufighters were out at dawn and swept as far south as Gwa, strafing a total of seventeen coastal craft. Hurricanes continued this work during the day, searching into the waterways in the Kaladan area and south-east of Akyab. They took heavy toll of the Sampans which they found and they damaged several larger craft of the barge type. The offensive against roads, however, was less productive since activity was slight. A total of twenty-five vehicles felt the impact of Hurricane attack in the Buthidaung area and a party of troops on the Maungdaw-Buthidaung road was subjected to low-level machine-gun attack.

17. Blenheims and Vengeances with fighter escorts comprised the bomber force during the day. Eleven Blenheims attacked dumps near Taungup, causing one large fire, while six others attacked Kyaukpyu and Sakanmaw where bursts were seen in the target areas. Meanwhile Vengeances dive-bombed the warehouses at Satyogya Creek on Akyab island, scoring direct hits on several buildings. This day long offensive was followed by Wellingtons and Hurricanes by night. The Wellingtons patrolled the road north of Taungup and failing to find any signs of movement, bombed Taungup and Kyaukpyu. The Hurricanes strafed the waterfront at Akyab and shot up four large sampans and twenty small boats near Middle Baronga Island. The U.S.A.A.F. attacks in the Irrawaddy valley were very effective. They concentrated on the railway yards at Prome, on oil targets at Chauk and Lanywa, on Minbu and Thayetmyo. The smoke from the resulting oil fires proved the accuracy of the bombing and at Minbu an explosion occurred in the middle of the fires which rocketed smoke to a height of 5,000 feet while black oil smoke was visible for 100 miles. A large area in the centre of the town was completely devastated.

18. The second day of the operation, 19 May 1943 saw similar attention being paid by Hurricanes and Mohawks to the waterways in Arakan. Blenheims and Beaufighters attacked the coastal road from Taungup, dumps were bombed and machine gunned and at night Liberators caused fires at Taungup and Kyaukpyu. The Americans continued their operations farther east, concentrating on Thayetmyo, the oilfields at Padaukpin, Magwe town and the workshops at Singu and Lanywa. Again fires with huge columns of smoke were caused, that at Magwe rising to 10,000 feet. The third and final day, 20 May, was a repetition of the other two. Small shipping was strafed in the waterways between Myebon and Buthidaung while Blenheims, Beaufighters and Wellingtons attacked buildings and huts on the coast road from Taungup and at Kyaukpyu. The U.S. Air Force attacked railway installations at Prome, the cement works at Thayetmyo, warehouses at Monywa and Myingyan, oil targets at Yenangyaung and Allanmyo.

19. That the effect of these operations was great there is no doubt. The Japanese Air Force, which hitherto had ignored our bomber attacks, was stung into retaliation. He moved into Burma additional fighter aircraft to counter the Allied offensive but by that time the operation had achieved its purpose and had been concluded. On 21 May he put up fighter patrols in the Irrawaddy valley and made a

sweep over our forward airfields in south-east Bengal. Indicative of the importance of operation Wimpole is the congratulatory message sent by the Army Commander to the R.A.F. and U.S.A.A.F. He said 'Most grateful for your joint efforts in operation Wimpole from 18 to 20 May. Ground intelligence reports confirm result in Japanese casualties most effective and whole effort appears definitely to have restricted further forward movement of enemy in any numbers and to have seriously upset their supply arrangements'.

O.R.B. AHQ. Bengal May 1943

20. From January to May 1943 the enemy mounted some 1,159 sorties over the battle area while in the same period the R.A.F. flew 5,050 sorties in direct and indirect support of ground operations. They flew a further 692 sorties in the defence of airfields and installations in the Chittagong area and the Mayu Peninsula. Bombers of No. 221 Group also assisted in the campaign by mounting twenty-five sorties against targets on the Mayu Peninsula and 125 sorties against Akyab island. Moreover, the offensive operations maintained by No. 221 Group against enemy airfields undoubtedly hindered the enemy air force and restricted his activities.

Tactical Reconnaissance

21. The Japanese achieved quite a high reputation for his skill in concealing himself in jungle country and he maintained that reputation to the full during the Arakan operations of 1942-43. Good tactical air reconnaissance was therefore of considerable importance to the land forces. In Arakan tactical reconnaissance was carried out, first by Lysanders and from 7 January, 1943 by Hurricane IIB's of No. 28 Squadron. The Hurricanes had their four outboard guns removed and this provided a balance of manoeuvreability and fire power sufficient for this type of work. When the Hurricanes first began to operate, no intercommunication was possible between air and ground owing to the absence of suitable equipment. This, however, was no great disadvantage since No. 28 Squadron Detachment operated from Maungdaw, about 100 yards from Divisional Headquarters. Thus no time was wasted in getting information back to the Army.

File AHQ(I) 100/26/Air Encl. 1B.

File AHQ(I) 192/air

22. Throughout the period of operations, No. 28 Squadron maintained six aircraft in Arakan. Their task was to locate and report enemy positions and movements, to attack suitable targets and to photograph areas of the battle front as required by the Army. At first all tactical reconnaissance was carried out by single aircraft but later, when enemy activity increased, it was necessary on occasions to send them out in pairs in order to provide greater protection. On 22 January, however, a photographic Hurricane was shot down and its escort damaged and so fighter escorts of from one to two sections were laid on for all long reconnaissances. No. 28 Squadron continued their effective and whole-hearted co-operation to the Army in Arakan from Maungdaw until the critical situation around Indin forced them to move back to Ramu. Maungdaw, however, continued to function as an advanced landing ground until the impetus of the Japanese advance engulfed our forward air strips.

File AHQ(I) 100/26/Air

File AHQ(I) 192/4/Air

23. The problems confronting pilots were many. Enemy troops were only rarely observed by aerial reconnaissance and on the few occasions when pilots caught a glimpse of him, it was a fleeting one, before he had had time to melt into the jungle. Add to this the fact that all major Japanese moves were made by night, the difficulties of obtaining reliable and useful information from the air will become obvious. In Burma the only height at which anything could be seen was 50 feet. With the Japanese using little or no mechanical transport and with his infantry avoiding roads and tracks, reconnaissance was chiefly down small rivers or streams with overhanging jungle or on tree infested hillsides. Tac/R. pilots had to be able to look "into" the jungle if they were to see any Japanese making for or taking cover. In most areas a view from above the trees revealed no ground at all and consequently no information. Though the country normally allowed pilots to make a covered approach to the reconnaissance area, thereby helping to achieve surprise, this was somewhat offset by the Japanese practice of going to ground on hearing an aeroplane and not on sighting it. It was found that more information could be obtained if the reconnaissance aircraft was accompanied by another flying slightly astern. Low-flying, watching the ground and map-reading presented a difficult enough task without the pilot having to watch his own tail and the sky. Indeed, all pilots felt that they could do a better reconnaissance in the presence of another aircraft.

24. The tactical reconnaissance aircraft of No. 28 Squadron produced their best results in vertical and oblique photography for military intelligence. Experience during the early months of 1943 indicated that visual reconnaissance in jungle country was unlikely to produce adequate results, whereas forward troops in Burma could gain valuable information from a study of vertical and oblique photographs of their immediate battle areas. Many visual reconnaissance sorties revealed nothing significant and this tended to make inexperienced pilots feel that their job was just not worthwhile. But good tactical reconnaissance was important in a country where the nature of the terrain reduced visibility of ground observers. A good squadron manned by pilots who knew the country intimately was undoubtedly a great asset to Army commanders.

Summary of the Arakan Campaign

25. The result of the Arakan operations was disappointing. The campaign cost us 2,500 battle casualties, malaria cost us infinitely more and there is no doubt that the troops who were engaged came out severely shaken. "The greatest gain from the campaign" said Wavell "was experience of the enemy's methods and of our own defects in training and organisation. The serious loss was in prestige and morale". That last sentence illustrates the tragedy of the failure. Following the disasters of the Far East campaigns of 1942, the morale of British-Indian troops was at its lowest ebb. It seemed that the Japanese were invincible jungle fighters. It was this pessimism that Field Marshal Wavell so much wanted to dispel by a resounding defeat of the Japanese in Arakan. In the event, the battle fought in the Mayu Peninsula aggravated the complaint.

26. But the cause of the failure cannot be put on to the troops themselves. They fought boldly and well in the initial stages of the campaign and individual courage of the highest order was shown. It was not until the later stages of the fighting after several months of continuous engagement in an unhealthy climate and under the discouragement of

failure, that there was any deterioration of the endurance and fighting capacity of the troops. The Japanese defences, skilfully prepared and held to the last, were difficult to overcome without superiority in numbers and equipment. Moreover, the training of our troops had been sketchy and the tactics pursued appear, in retrospect, to have been surprising. We were, in fact, woefully lacking in experience of jungle warfare. The enemy counter offensive was well planned and executed; their mobility and infiltration tactics in close jungle country could not be countered. Air supply might have saved the situation but there were no aircraft available to supply troops in Arakan that had been cut off by enemy encirclement. Withdrawal was the only alternative to starvation and annihilation.

27. The lessons of the air were significant. We did not possess the right types of aircraft for close support operations and we were very inexperienced in this type of warfare. Thick jungle country made matters even more difficult. All close support bombing had to be undertaken by the Blenheim squadrons and it was impossible for this type to attain the degree of accuracy necessary to obliterate enemy dug-in positions which were the stumbling block of the ground forces. At Donbaik and Rathedaung the enemy went to ground in cleverly camouflaged fox holes which often remained intact and in action even after our troops had passed over them. These fox holes could only be neutralised by direct hits by bomb or shell. In short, the bomb line could not be brought near enough to our own troops for them to take immediate advantage of our bombing. Japanese troops could recover from the effects of bombing long before a ground assault was launched. Thus close support bombing by the R.A.F. could have had little effect on an enemy safely ensconced in strong points. This, however, applied only to attack. When our troops were withdrawing, bombing could and did keep the enemy immobile while our troops escaped from dangerous situations. The number of Blenheims available for close support operations never exceeded one squadron at a time and an attack by eight aircraft was considered to be a fairly heavy one. The Vengeance aircraft might have been more effective in army support work, but though a flight was sent to the Arakan in March 1943, they had to be withdrawn from operations after ten days owing to technical troubles.

28. Though the Hurricane was unsuitable for defensive duties against the lightly armoured and manoeuvreable Japanese types, they did some valuable work in Arakan. Their greatest success, however, was gained in their operations against enemy communications just to the rear of the front line. From mid-March their offensive activities were somewhat curtailed while they dealt with the Japanese air offensive. That the enemy did not achieve any conspicuous success in the air speaks well of the determination of the Hurricane pilots. A more detailed summary of the battle for air superiority, however, will be found in Section X.

SECTION IX

THE FIRST WINGATE EXPEDITION FEBRUARY TO JUNE, 1943

Introduction

1. The late Major General O. C. Wingate, D.S.O. had twice served under Field Marshal Sir Archibald Wavell. In Palestine before the second world war, Wingate had organised a Jewish volunteer militia to fight Arab terrorism and in Abyssinia in 1941 he had led patriots against the Italians. Early in 1942, while operations were still in progress in Burma, Wavell asked for Wingate's services to organise guerilla activity. He arrived too late to accomplish anything in Burma as the campaign there was almost over, but Wingate drew from it the necessary deductions and set before Wavell a plan to form and train a special brigade which could penetrate deep into enemy territory.

IIJ50/47/25 Report on Operations of the 77th Brigade.

2. Wingate saw that granted the power to maintain forces by air and direct them by wireless, it would be possible to operate ground forces for indefinite periods in the heart of enemy held territory. These forces would, it was assumed, form a vital part in a plan of major conquest. The effect they could produce on the enemy's ability to defend a country such as Burma was thought to be proportionate to the number of columns employed and that they could produce a situation in Burma called for maximum exploitation by main forces. Moreover, there were great possibilities that these would be better placed than any other ground forces to assist the air arm in its offensive, supply it with detailed intelligence and exploit on the spot the opportunities created by its attacks.

Formation and Training of the Special Force

Despatch by F. M. Wavell Jan.-June 1943. File CS.23333

3. Wavell approved the then Colonel Wingate's proposals and placed him in command of a formation which became known as the 77th Infantry Brigade. The troops allotted to the Brigade were not in any way hand picked, they were selected from troops which happened to be available at the time. The Brigade comprised three(1) groups (known as Long Range Penetration Groups - L.R.P.G's) and eight columns each of which had an R.A.F. section attached to them, comprising one officer pilot and four wireless operators. These R.A.F. sections were included since it was thought that supply dropping and the control of air strikes could best be carried out by R.A.F. pilots with recent combat experience. In all, the Brigade numbered some 3,000 men organised on a pack transport basis for which a thousand animals were assembled. Each column was equipped with Mortars and machine guns and a wireless set, the latter being the most important part of their equipment. Once the Brigade entered enemy territory the only method of supply was to be by air and local purchase, wireless being the sole link with friendly territory and the sole means of arranging supply dropping.

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(1) Comprising Brigade H.Q. Group, No. 1 Group and No. 2 Group.

IIJ50/47/25 Report on operations by 77 Brigade.

4. Training began in July 1942 and followed a rigorous course. So much so that one column had to be disbanded and its personnel used to fill the vacant places in others. Not only did the personnel have to achieve physical toughness, but they had to be fully trained in the doctrines of jungle craft and long range penetration devised by Brigadier Wingate. In September 1942 an exercise was carried out by the Brigade and witnessed by the Commander-in-Chief, Field Marshal Wavell. Wingate was still doubtful, in view of the poor quality of his personnel, whether the Brigade could do the work they were destined for. But Wavell encouraged Wingate to carry on. On September 20th, Wingate flew in a Blenheim over what proved to be the exact path of future operations and on the basis of what he saw, he was able to tell the Commander-in-Chief that the plan was feasible. Preparations were therefore made to transfer the Brigade to Manipur Road, Assam.

5. Although the presence of R.A.F. sections with columns gave evidence of R.A.F. support, all those concerned with training were greatly worried at this stage by the almost complete lack of experience in supply dropping and analogous air problems. As a result only of repeated efforts and representations by Wingate, a few unrealistic exercises by Lysander aircraft were carried out and this was all that was done until just before the beginning of operations. Even then, a realistic exercise only took place owing to the personal interest of the A.O.C. Bengal Command.

6. After the arrival of the Special Force at the Manipur Road base in January 1943, the first exercise in supply dropping was performed by night. It was a success. Had it been otherwise the operation could not have taken place. To say that a full try out was essential before troops were committed is an understatement and thus with the enthusiastic co-operation of Bengal Command a series of supply dropping experiments were staged near Manipur Road between 19 and 21 January. They all took place at night since at that time it was thought that supply dropping to the Brigade could not be done other than under the cover of darkness. All ranks of the Brigade were greatly heartened by this convincing demonstration of the R.A.F. to deliver the goods. Many were they that had doubted.

O.R.B. AHQ. Bengal Jan. 1943

7. For the operation a small detachment of transport aircraft was made available. It varied in size during the campaign, seldom more than three Hudsons and three D.C.3s being used. This detachment was located at Agartala and had the air base not been organised in good time and on the right lines, the Wingate operation would probably have failed. The supply of long range penetration groups was a matter of life and death and it was therefore fortunate that A.H.Q. Bengal not only agreed to all Wingate's requests but placed their best operational airfield at the disposal of the air transport detachment. There were strong arguments in favour of Tezpur but happily they were rejected by the A.O.C. Bengal. Agartala possessed by far the best dispersal and A.A. defences and was nearer the centre of operations. The wisdom of selecting Agartala was demonstrated when the enemy made an air attack on the airfield on 6 April which failed to take effect owing to the excellent dispersal.

The Plan of Operations

IIJ50/47/25 Report on operations of 77 Brigade.

8. The original role allotted to the 77th Brigade was that it should penetrate deep into central Burma at a time when Upper Burma was being attacked by General Stilwell's forces from Ledo and Chinese forces from Yunnan. In Burma the

Brigade was to disrupt enemy communications and cause much confusion in the enemy's rear, thereby assisting the main effort. When it was found that the plan to re-occupy Upper Burma in the dry season of 1942-43 was premature, the operations of the 77th Brigade had no support and no strategic object. According to theory it was wrong to employ long range penetration groups until a follow up by main forces could be contemplated and Wavell, therefore, had to decide whether to employ the Brigade at all. The arguments in favour of employing it were, however, stronger than those against.

9. The whole theory of long range penetration had yet to be fully tested against an enemy worthy of its steel. The 77th Brigade, composed as it was of some dubious elements, was probably fitter for an experiment than for a role on which large scale operations depended. Owing to the physical and mental characteristics of the personnel, they had reached a point at the end of training, which however far it might have been from the ideal, was higher than it could be expected to reach again. The Brigade had been raised and trained for operations in the winter of 1942-43 and the whole tempo set to that tune. Not to use it would have been to lose it. Moreover, apart from certain individuals, the Army as a whole had to be convinced of the feasibility of such operations, and operations in the field was the best way to demonstrate the value of L.R.P.G.'s. In addition to these strong arguments for early employment, many disputed views were current as to the chances of Burman co-operation in the re-conquest of Burma and great ignorance prevailed regarding the sentiments of rural communities.

10. On 6 February, 1943, Field Marshal Wavell flew to Imphal, where the 77th Brigade was concentrated, and held a long discussion with Brigadier Wingate. As a result, Wavell decided to let the operation continue in order to gain experience. The object of operations, therefore, was firstly to demonstrate the correctness or incorrectness of Wingate's theories, secondly to test the revolt potential of the Burmans especially the hill tribes, and thirdly to disrupt the railway line Shwebo-Myitkyina exploiting the resulting situation, and if it seemed worthwhile, to march on across the Irrawaddy to operate against the main enemy communications between Maymyo, Lashio and Bhamo. On 7 February, 1943, Field Marshal Wavell visited the Brigade near Imphal and on the following day the force began its eastward march.

Operations of the 77th Brigade

IIJ50/47/25
Report by
Brig. Wingate

11. Wingate's first problem was to get 3,000 men and 1,000 animals through a Corps front and to a railway 150 miles inside enemy territory without interception. He decided that while the main force comprising the Brigade Group, No. 2 Group and five columns, crossed the Chindwin at Tonhe, a southern force (No. 1 Group and two columns) of 1,000 men should cross at Auktaung some three days ahead of the main body of the Brigade. At the same time IV Corps troops in the area were to simulate an attack on Japanese positions at Kalewa, thus indicating a southward advance. On 13 February, however, an advance party of the northern force crossed the river at Tonhe so as to convince the enemy that the small northern crossing was in fact a diversionary raid to cover a larger crossing farther south. For a few days at least, the enemy was completely deceived and for the moment he regarded the southern crossing as the principal axis

of advance. To add more fuel to the fire, supply dropping at Auktaung was carried out by day within sight of Japanese posts.

File AHQ(I) 117/8/Air Encl. 3B

12. By 15 February, No. 1 Group and two columns were across the Chindwin at Auktaung and had commenced their march carrying the 30,000 lbs of supplies dropped to them by ten R.A.F. Hudsons on 14 and 15 February. The northern force had crossed the Chindwin at Tonhe by the 18th and reached Myene where nearly 71,000 lbs of supplies were dropped on three nights 15, 16 and 17 February, in the course of sixteen sorties. On the first of these three nights a curious and fateful error was made by one of the transport aircraft. The aircraft arrived over Myene just as a thunderstorm began and so failed to find the dropping zone. The pilot, not wishing to attempt the return flight over the hills with a full load, thought to jettison his cargo east of the Chindwin. Unfortunately, he selected a sandbank within a mile or two of a Japanese post, which at once collected what was dropped. Had this been limited to rations, little harm would have been done, but it included the complete mail of the northern force, thus making a present of the order of battle to the enemy.

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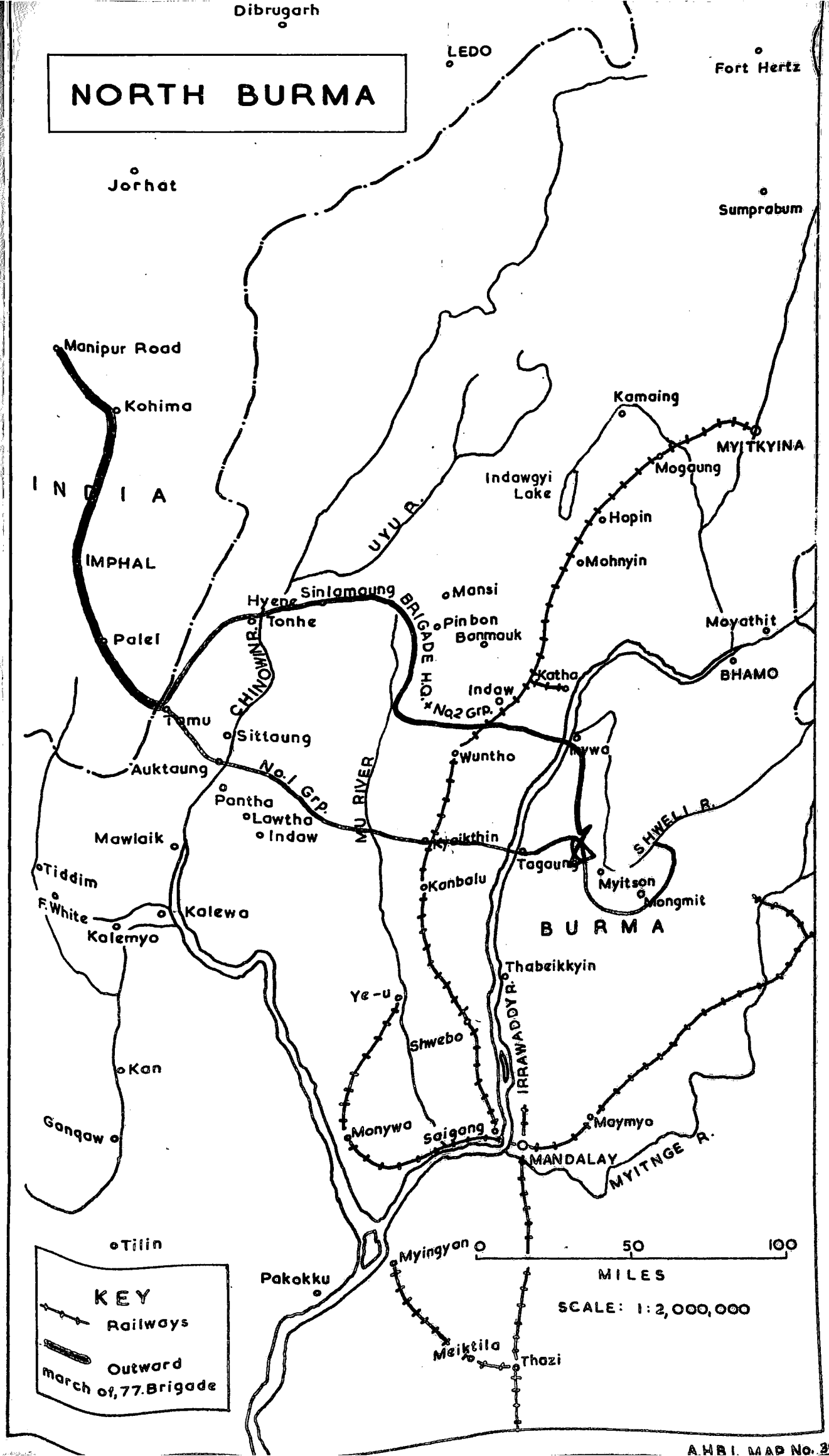
13. The Japanese took three days to get the addresses translated and to draw their conclusions. This had no small bearing on subsequent events. Up to 19 February, when he may be deemed to have become aware of the 77th Brigade's strength, there was every indication that he had no intention of abandoning the village of Sinlamaung, which was in the proposed path of the Brigade, but would defend it with his usual tenacity. On the 19th, however, he began drawing in his patrols and by the 24th the evacuation of all posts between the Chindwin and Mu river valley was complete and Sinlamaung abandoned. It is evident that the enemy thought he was caught in a trap and would lose all his scattered posts and troops if he stayed to face a greatly superior force. Wingate admitted that had the Japanese stayed and fought it out at Sinlamaung, he might not have reached the railway. Not only would the capture of Sinlamaung cost heavy casualties but the blocking of all tracks would have been carried out by the enemy. So one must regard the R.A.F. blunder as providential. It was encouraging to note, however, that the enemy had exhibited panic on this occasion because he was completely taken by surprise. What happened at Sinlamaung might happen elsewhere on a larger and more fruitful scale.

14. Thus the main force marched eastwards unhindered to Tonmakeng where a supply dropping had been arranged to take place on 24 to 26 February. Meanwhile, No. 1 Group to the south had proceeded eastwards with the intention of reaching the railway at Kyaikthin. They received their second supply drop at the village of Yeshin, near the Mu river on 27 February. On 3 March the Brigade was placed as follows; No. 1 Group and two columns were approaching the railway at Kyaikthin; the Brigade H.Q. and No. 7 Column were ten miles from Pinlebu; Nos. 3 and 5 Columns were heading for the railway at Wuntho and Bon Chaung respectively; No. 8 Column was about to attack enemy positions at Pinlebu and No. 4 Column was active in the Pinbon area. Thus the stage was set for the attack on the railway and a further advance, though events occurred which reduced the Brigade by two columns. In the south No. 2 Column, while marching for Kyaikthin, was ambushed by the enemy. The majority of the scattered Column's personnel, however, succeeded in reaching the Chindwin. Further north, near Pinlebu, No. 4 Column was dispersed during an encounter with the enemy and the survivors of this column


NORTH BURMA
Dibrugarh
LEDO
Fort Hertz
Jorhat
Sumprabum
Manipur Road
Kohima
INDIA
IMPHAL
Palel
Tamu
Auktaung
Mawlaik
Tiddim
F. White
Kalemyo
Kalewa
Kan
Gangaw
Tilin
Pakokku
Hyene
Sinlamaung
Tonhe
CHINDWIN R.
UYU R.
BRIGADE H.Q. & No.2 Grp.
No.1 Grp.
MU RIVER
Sittaung
Pantha
Lawtha
Indaw
Mansi
Pinbon
Banmauk
Indaw
Katha
Kamaing
MYITKYINA
Mogaung
Indawgyi Lake
Hopin
Mohnyin
Mogyathit
BHAMO
Inywa
Wuntho
Kyaikthin
Kanbalu
Tagaung
Myitson
Mongmit
SHWELI R.
BURMA
Thabeikkyin
IRRAWADDY R.
Ye-u
Shwebo
Monywa
Saigang
Maymyo
MANDALAY
MYITNGE R.
Myingyan
Meiktila
Thazi
KEY
Railways
Outward march of 1, 77. Brigade
0 50 100
MILES
SCALE: 1:2,000,000
A.H.B.I. MAP No. 306

too, marched back to the Chindwin.

15. From 3 to 6 March, No. 8 Column carried out a series of reconnaissances in the neighbourhood of Pinlebu, with the object of making the enemy believe that Wingate's objective was Pinlebu itself. The ruse worked and the Japanese began to reinforce Pinlebu via Wuntho. A call was therefore made by Brigade H.Q. for the bombing of both villages which was duly carried out on 4 March. The activities of No. 8 Column also had the object of covering the projected supply dropping to the main force scheduled for 6 March at Aunggon. The Column succeeded in attracting a good deal of attention and the supply dropping was a success in spite of the close proximity of enemy forces.

Despatch by F. M. Wavell Jan.-June 1943. A.M. File 23333

16. The main attack on the railway was made by 3 and 5 columns on 6 March. They cut the railway in seventy places, three bridges were destroyed and the side of a gorge blasted to bring down thousands of tons of rock on to the line. Farther south on 2 March, No. 1 Group and its one remaining column had successfully evaded the enemy and reached the railway at Kyaikthin, where they destroyed a bridge and laid a number of mines before marching on to the Irrawaddy near Tagaung. The attack on the railway had been highly successful but Wingate had been shocked at the poor fighting quality of some of his troops. The problem now arose whether to return to India or cross the Irrawaddy to raid farther east. Since one of the main objects of the expedition was to gain experience, Wingate decided to cross the Irrawaddy in order to ascertain whether the methods and equipment for river crossings were practical.

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17. Before crossing the great river barrier, however, it was necessary to receive more air supplies. No. 3 Column supply drop took place on 11 March but No. 5 Column was unlucky. In spite of the appearance of loaded aircraft over the specified area at the specified time the drop did not take place because No. 5 Column was unable to reach the area in time. The Brigade Group and No. 7 and 8 Columns planned to receive their supplies on 13 March at Kyunbin, north of Wuntho. On 12 March mortar fire broke out at Kyunbin. At the time it was impossible to guess the meaning of this and Wingate sent a message to IV Corps asking them that supply dropping should not commence without previous confirmation that all was well. On the morning of 13 March enemy forces were encountered near Kyunbin and Wingate therefore cancelled the supply dropping and ordered the Brigade to rendezvous before making a dash for the Irrawaddy. Wingate's cancellation never reached the air base and while the columns were concentrating the supply dropping aircraft arrived. Seeing the troops the aircraft repeatedly circled overhead in the hope that signals would be given for the drop to take place. But this could not be since all open spaces in the area were vulnerable to enemy interference. Had more experience been gained of supply dropping, Wingate could have arranged for the drop to take place in the jungle and used an Aldis lamp for signalling purposes.

18. The southern force received a very generous supply by air on 9 March near the Irrawaddy at Tagaung. After they had crossed the river they received another, on 13 March. This force then marched eastwards for the mountains around Mongmit to await the arrival of the remainder of the force. Nos. 3 and 5 Columns, who had been operating independently, crossed the Irrawaddy under their own arrangements and the Brigade Group crossed at Hlebo. While the crossings were

File AHQ(I) 117/5/Air Encl. 3A

being made R.A.F. Mohawks patrolled the river to keep off any enemy launches that might appear. By 18 March the entire force, other than the two columns that had been dispersed, was east of the river. But once across the river the Brigade began to encounter difficulties. It was very hot, water was hard to find and the health of men and animals began to suffer. There were more Japanese in the area than had been anticipated and many motorable tracks gave the enemy a mobility which enabled him to deploy forces rapidly in areas occupied by troops of the 77th Brigade. Hence it became difficult to arrange supply dropping. Eventually the projected operations against the Mandalay-Lashio railway were abandoned and a decision made to return to India.

IJJ50/47/25 Report by Brig. Wingate

19. At this stage the use of transport aircraft to deceive the enemy was first exploited. IV Corps had suggested it some time before but the moment had not been ripe. At this juncture, however, it was clear that if the enemy could be persuaded that Wingate's intention was to destroy the Gokteik viaduct, attack Maymyo and block the Mandalay-Lashio road, the effect would be an easing of pressure in the immediate neighbourhood of the Brigade. Genuine mail was therefore dropped and the thing done in such a way as to suggest convincingly that several columns were on their way to Maymyo, where the Japanese H.Q. was located. Following these bogus supply droppings, pressure against the Brigade seemed to lessen, although there is no evidence that the operation was a complete success.

20. Heat and the shortage of water, combined with the exhaustion of long marches, lowered health to a point when it interfered with the fighting power of the Brigade. It was all the more important, therefore, to have a substantial supply drop before commencing the march back to India. As there were paddy fields in the area, Baw was selected as the dropping zone. Unfortunately, a clash with the enemy occurred on 24 March and in consequence it was impossible for the supply drop to take place at the original zone. Signal fires were therefore lighted in the jungle to mark a dropping zone. The supply dropping in the jungle started well, two W/T operators parachuting down and one and a half days rations being dropped. The pilots then became suspicious, they ceased their work and went home. Later in the day they returned and some more supplies were dropped but the total was less than two days' rations for the Brigade Group. The experience had, however, shown what could be done with supply dropping in the jungle and on the following day (26 March) a successful dropping near the Salin Chaung was arranged. Four days' rations floated down including bully beef, beans and rum, comforts which were very welcome at this moment.

21. By this time the Japanese had organised defensive measures for restricting the activities of the 77th Brigade. The force found itself in a triangular area formed by the Irrawaddy, the Shewli river and the Mongmit-Thabeikkyin road with Japanese forces distributed along three sides of the triangle. On 24 March the bulk of the Brigade set out for Inywa, on the Irrawaddy. An attempt to cross the river here was discovered by the enemy and had to be abandoned. An order was therefore given to withdraw into the jungle to arrange a last large scale supply dropping. On 30 March a dropping zone was selected in forest near Pinlebin. Punctually, the transport aircraft arrived and dropping commenced. It was a vital moment for the troops, for without these rations their chances of reaching India were slender.

22. After supplies had been received the force was split up into dispersal groups, a manoeuvre which had been practised during training. The dispersal groups crossed the Irrawaddy on a very wide front and returned to India independently. In this way the majority escaped the Japanese net but not before they had experienced many hazardous moments and great hardships. Most groups reached the Chindwin area (aided by sporadic supply dropping) in the area occupied by IV Corps troops near Sittaung. One column crossed the Chindwin as far north as Tamanthi and thence went to Kohima; one marched due north and won out by Fort Hertz; one went north-east to Paoshan in China, and was feted by the Chinese who were honoured to "entertain British officers who did not have creases in their trousers and who did not ask for a bed to sleep on". This party was flown from China to India by the Americans at incredibly short notice. The majority of the 77th Brigade had returned to India by the first week in June having spent nearly four months inside enemy occupied territory.

23. Since it is impossible to trace all the movements of individual groups on their homeward march, so great was the dispersal, an instance or two of R.A.F. assistance must therefore suffice. While a party of No. 8 Column was crossing the Shweli river on the homeward journey, the rope with which they had spanned the river broke and the rubber dinghy was lost in the fast moving current. With rope and dinghy gone there was no hope of crossing the river that night. The Column Commander moved his men into a secluded hollow, where there were plenty of bamboos, and bivouacked for the night. All the following day they worked hard building bamboo rafts and paddles. At the same time they sent a W/T message to Agartala in the rather forlorn hope that the R.A.F. might be able to drop another rope and dinghy. Towards dusk they finished their rafts and were just about to drag them down to the river when an aircraft arrived overhead. It dropped its cargo which included several new dinghies, a stout new rope, lifebelts for two-thirds of the men and two days' rations. This supply dropping had a tremendous uplifting effect upon the morale of the men. Long before morning the party, including the W/T carrying mule, were across the Shweli. A few days later, on 4 April, the party was again located by aircraft and more supplies were dropped, in all ten days' rations, medical supplies and some clothing.

24. The same column after crossing the Irrawaddy, found itself in bad marshy country. A number of the party had been wounded in brushes with the enemy and some were ill, including the Colonel Commanding No. 2 Group. The bad marsh land opened up partly healed wounds and greatly weakened those who had been ill. They eventually came upon a large open "T" shaped field where the Commander decided to rest and arrange a supply dropping. Many of the sick and wounded had no chance of reaching India but it occurred to the Column Commander that if an aircraft could land in their jungle clearing, the sick personnel could all be saved. The following morning they put out smoke signals and laid out strips of parachute silk spelling "Plane land here". When the transport aircraft arrived it dropped its cargo and lowered its wheels preparatory to landing. After making one approach run the pilot decided against it and returned to base. Since only half the supplies asked for had been dropped, the party decided to wait. Next morning another transport flew over the jungle clearing and dropped a full load of supplies. Attached to one of the containers was a questionnaire asking for details of the landing area. The necessary information was indicated to the

pilot by letters in parachute silk and an improvised runway was marked out. Early the following morning, 28 April, 1943, a D.C.3 arrived with fighter escort. It dropped another issue of rations and then landed somewhat erratically on the uneven field. All the seventeen sick and wounded personnel were taken on board and the D.C. prepared to take off. This was a tense moment as the field was small and rough, but by exercising considerable skill the pilot managed to become airborne though not before an anxious moment when the aircraft actually brushed against some trees. The remainder of the column waited all next day in the hope that more aircraft would arrive to evacuate them all. When another aircraft did arrive, it dropped a complete outfit of clothes and boots and a note explaining that the risk was too great for more aircraft to attempt further landings. The men, however, were now in good condition, they had new clothes and boots and plenty of food, they had full packs and they had had five days' rest. They continued their westward march soon after the last aircraft had left.

25. Not all dispersal groups were as fortunate as No. 8 Column. Many had no wireless equipment and could not, therefore, call for air supply, though many parties were succoured when contacted by R.A.F. reconnaissance aircraft. Some parties received no supplies at all by air and had to do their best with local purchase. In this connection, the groups which passed through Kachin country fared the best. These friendly tribesmen gave food, shelter and guides and passed much information on enemy movements to the troops of the 77th Brigade.

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Report by
Brig. Wingate

26. So ended a remarkable campaign. The troops had marched not less than 1,000 miles, some actually covered fifteen hundred. They had penetrated as far as they wished into enemy territory and though the Japanese did their utmost to arrest the penetration they did not succeed at any time. Of the 3,000 men who entered Burma, 2,000 had returned to India by the first week of June. These troops had endured severities to which there can have been few parallels. But all had borne hardship with cheerfulness and resolution, marching out under their officers complete with arms and personal equipment and with better discipline than was observed at the beginning of the campaign.

IIJ54/8/4
SEATIC No.
247 - Apr.
1947

27. As already mentioned, the strategical value of the campaign was negative. It coincided with a Japanese plan for despatching units into the Sumprabum, Bhamo and Chindwin areas for propaganda and pacification purposes. It may be said that the Wingate operation afforded an instance of the defensive employment of long range penetration groups. The operation had the effect of changing the enemy plans and of forestalling a contemplated penetration by his own forces. The Wingate expedition also had the effect of teaching the enemy a few points on jungle warfare. The unsuitability of mountain and jungle country for defensive measures was amply illustrated and the Japanese decided that defensive tactics should give way to offensive operations against Imphal and Kohima with the object of destroying Allied bases for counter operations. The Japanese plan for operations against Imphal, which had been shelved towards the end of 1942 as being impracticable, was reconsidered, following the success of the Wingate expedition, and led to the Japanese offensive across the Chindwin in March 1944.

IIJ54/8d
SEATIC No.
242. Lt. Gen.
Numata

R.A.F. Sections of 77 Brigade

IIJ50/47/25
Report
Br. Wingate

28. The R.A.F. officers provided for the R.A.F. Sections were of high fighting quality and were all that could be desired. Unfortunately, the course of operations did not afford them nearly the scope that might be expected when an L.R.P.G. is used offensively as a vital part of a strategic plan. Nevertheless, the R.A.F. sections were of great value to columns and Wingate was convinced of their necessity to control air co-operation, air intelligence and the exploitation of strategic bombing. Moreover, the troops felt that the presence of an R.A.F. detachment was indicative indeed of the co-operation of the other service. The R.A.F. officer was air representative, not only to the column commander, but to all ranks in the column, particularly as they relied upon air co-operation for their very survival. The success of the R.A.F. sections is well shown in the tribute(1) paid to them in the body of Wingate's report. He considered that some of the R.A.F. officers were capable of commanding columns themselves. When the Brigade dispersed prior to the homeward march, some R.A.F. officers took charge of small parties and brought them safely to India. The R.A.F. also suffered casualties. Wingate singled out two R.A.F. officers, he said "These two indefatigable and devoted R.A.F. officers viewed every problem simply from one point of view - the defeat of the enemy. I am afraid both have lost their lives, one in trying to save Gurkhas from drowning in the Irrawaddy and the other in sticking by his wounded Colonel after all hope of getting him back to India had been abandoned".

File AHQ(I)
117/51 Air
Encl. 7A

29. After the Wingate expedition the value of R.A.F. officers accompanying L.R.P.G's was discussed at some length by A.H.Q. India, A.H.Q. Bengal, Brigadier Wingate, the IV Corps Commander, Nos. 221 and 224 Groups. The S.A.S.O., Air Headquarters, India considered that in view of the shortages of R.A.F. officers in India, co-operation by R.A.F. officers should not be carried out but that suitable selected Army officers should be given a short course of instruction in relative air matters and to be detailed as air advisers to L.R.P.G. commanders in future operations. But both Wingate and the Commander of IV Corps were adamant that R.A.F. officers should be provided to carry out this liaison duty. Moreover, the pilots of the transport aircraft, which so ably co-operated with the ground forces, were unanimous in their opinion that R.A.F. officers with columns helped very considerably their side of the operations. For instance, when a Dakota landed behind enemy lines to rescue sick and wounded personnel, the pilot concerned felt the utmost confidence in carrying out the landing because an R.A.F. officer was known to have selected and approved the landing area beforehand. From the R.A.F. point of view there was also the confidence of all R.A.F. tactical commanders in carrying out attacks on targets selected by R.A.F. officers on the ground who knew the capabilities and limitations of the aircraft and personnel employed. Admittedly the knowledge might be assimilated by Army officers, but only after a good deal of practical experience. In any case it was thought that Army officers would not prove as efficient as R.A.F. officers

(1) It should be remembered that praise from Wingate was praise indeed. If the R.A.F. sections had not been a success, Wingate would have said so in no uncertain terms.

with combat experience. The effect upon the morale of Army troops was another matter of some importance. Wingate was emphatic that the effect of having R.A.F. officers with columns who called for assistance which materialised, had a most profound effect for the good of troops. Unfortunately, during the operations of the 77th Brigade, suitable targets for attack by aircraft as a result of ground observation were not very plentiful but on the rare occasions when air support was called for the effect on the troops was very great.

Air Transport

O.R.B. 31 and 194 Squadrons Feb.-May 1942

30. During the Wingate expedition the R.A.F. flew some 178 supply dropping sorties, of which nineteen were abortive, and they dropped just over 300 tons of supplies to the columns. The majority of this tonnage was collected by the ground forces though on the first occasions aircrews were less expert than they subsequently became. For instance, on the night of 16 February at Myene, over ten per cent of supplies dropped were lost in marsh and forest. This was at least equally the fault of columns who took very little trouble to observe and recover distant parachutes while the villagers showed great celerity. Subsequently however, when supplies assumed a more vital aspect, columns did make every endeavour to collect packages which had been inexpertly dropped.

IIJ50/47/25 Report by an R.A.F. Section Commander

31. It was found that if the locality was safe, the most suitable area for supply dropping was a large paddy field. But suitable sites were also found in the jungle itself, in the occasional clearings which were sometimes found. Successful dropping was at times carried out in mountainous country in places where a suitable basin or plateau existed and the circuit adequate. The main point watched by the R.A.F. sections was that the supply dropping zones must be clear of obstructions, particularly at night and more especially on moonless nights.

IIJ50/47/25 Report by the Staff Captain - 77 Brigade

32. Although the job was done and in spite of the fact that the R.A.F. personnel concerned were greatly interested in the operations of 77th Brigade, the Army Quartermaster thought "That the tendency was to study R.A.F. convenience without considering the man on the ground" and "there were occasions when supply dropping was unsuccessful through an unnecessary time lag. Perhaps the R.A.F. failed fully to realise that when certain limits of time between when the drop should take place were stipulated by troops in the field, then these limits should be kept". These comments brought forth a counter attack by the Officer Commanding, No. 31 Squadron. He said "....Captain....amongst other somewhat ill-informed criticism made certain definite allegations against the R.A.F. Both these allegations are as untrue as they are malicious. On no occasion was R.A.F. convenience studied to the detriment of men in the field nor was there a single occasion when supply dropping was unsuccessful through a time lag attributable to the R.A.F."

File AHQ(I) 117/5/Air Min. 16.

IIJ50/47/25 Report on operations of 77 Brigade

33. According to Brigadier Wingate the supply dropping operations of the R.A.F. were a "brilliant and unexpected success". Reports from personnel in the field who returned from the expedition also indicate that supply dropping and maintenance from the air was highly successful. The Commander, IV Corps, however, thought otherwise. He did not disparage the efforts of the R.A.F. whom he praised but he thought that false conclusions might be drawn from the apparent ease with which air supplies were provided. To quote his own words "During the whole course of the operation, enemy air opposition was not once encountered and we were fortunate in not losing a single aircraft from any

cause. During the operation, all columns of the 77th Brigade suffered some degree of starvation for several days at a time". This was not entirely the fault of the air forces, however, since at times the ground situation forbade supply dropping and W/T communications, the means by which supply dropping was arranged, were not always reliable.

IIJ50/47/25 Report by an R.A.F. Section Commander

34. It is interesting to note the methods of indicating dropping zones. These had to be varied considerably according to circumstances and to prevent the enemy imitating our methods. By night any suitable pattern of fires was satisfactory, either a straight line, a "T" or "L", the number varying on different occasions. Fires could be seen for several miles and providing pin-pointing was accurate an indicator point(1) was unnecessary. By day smoke fires were not always adequate, particularly when the wind was strong or the jungle thick. It was not always possible for pilots to discern the pattern of fires and jungle fires also added to the confusion, especially towards the end of the dry season. If there was any obvious natural feature nearby, and the bearing and distance from the dropping zone was given, ground markings on the site were often sufficient. It was found, however, that pre-arranged Verey light signals and recognition signals on an Aldis lamp made doubly sure that aircraft found their objective. There was a general feeling that the procedures laid down by Air Headquarters, India relative to the types of fires and layouts, signals procedures and recognition signals, were too elaborate. It was proved in the field that highly successful results could be obtained when drops were made in thick jungle country and not necessarily in pre-selected open spaces. On occasions Aldis lamps and Verey lights were successfully used with no fires displayed at all.

IIJ50/47/25 R.A.F. Report

35. The vital factor in air co-operation was wireless communication. During the operations of the 77th Brigade, the R.A.F. sections carried 1082/83 pack-sets which made up three mule loads and proved too bulky and cumbersome for the job. The sets had too many component parts, which were heavy and awkward to manhandle, and they took far too long to get into operation. They also required more signals personnel to man them than were in fact available. Operationally the sets were perfectly adequate for contacting base to arrange supply dropping, to request tactical bombing and for the passing of intelligence. What was required, however, was a lighter set of equal capacity. Complete reliance was placed on W/T communications which inevitably failed on occasions owing to atmospherics or break-down, damage or loss of sets. Contact reconnaissance aircraft were often able to bridge gaps caused by W/T break-downs but the troops had not been trained to identify friendly aircraft and to indicate their presence to them. Even the R.A.F. personnel did not know what aircraft would be used for their support.

Air Support

IIJ50/47/25 Report by IV Corps

36. Since only eight air strikes were carried out at the request of the Brigade, the measure of R.A.F. support fell far short of what it might have been. This failure was in no way caused by any lack of willingness on the part of the R.A.F. but was due to inexperience and ignorance as to how

(1) Generally a prominent landmark.

the R.A.F. could best provide air support. No training had been carried out by the 77th Brigade in co-operation with the air arm (other than supply dropping); no R.A.F. formation was allotted to support the operation until after the Long Range Penetration Groups had entered Burma and consequently no air plan had been evolved. Air Headquarters, Bengal had merely stated that "Air support including co-operation may be required from both Nos. 221 and 224 Groups. Calls for air support are to be made by 77th Brigade direct on Agartala".

Operation Inst. No. 103 - Jan. 13 1943. App. "M" O.R.B. AHQ. Bengal Jan. 1943

37. No. 34 and 42 (Blenheim) Squadrons and No. 155 (Mohawk) Squadron were allotted to IV Corps, the Army formation controlling the operations of 77th Brigade. All these squadrons operated under No. 224 Group through No. 169 Wing at Agartala but the system of control proved to be unsatisfactory owing to poor communications facilities. In consequence, No. 170 Wing was moved into Silchar in mid-March and took over control of squadrons allotted for the support of IV Corps, all operating under No. 221 Group, Calcutta. Here again the system of control was unsatisfactory and No. 170 Wing moved to Imphal alongside IV Corps H.Q., an arrangement which though entirely satisfactory was made too late to effect any improvement in close support operations during the Wingate foray. Also located in the IV Corps area was a Lysander detachment for tactical reconnaissance. This detachment did some good work as the pilots knew the country thoroughly but during the latter stages of the Wingate operation, the Lysander detachment was withdrawn and replaced by Hurricanes flown by inexperienced pilots.

IIJ50/47/25 R.A.F. Rep.

38. Tactical bombing of enemy concentrations in villages in close proximity to Wingate's troops was carried out on several occasions. On 11 March a party of two British officers and some Burman troops were sent on a reconnaissance of Wuntho. The party established itself on a mountain overlooking the town and within one and a half miles of the railway station. Here they remained for 36 hours. Every six hours a messenger was despatched to Brigade Headquarters with full details of what was happening in Wuntho. These details were passed to Agartala and a successful attack was mounted by the R.A.F. on places actually known to be occupied by the enemy. Another particularly effective attack was carried out on 29 March when the presence of 700 Japanese troops constituted a threat to one of the columns. Blenheims therefore bombed the villages of Myitson, Mabein and Taunggon which had the effect of keeping the enemy occupied while our troops penetrated through the area.

39. On occasions information was gained by our ground forces of the exact location of targets farther afield in areas where our own troops were not operating. These targets were notified to Agartala and air strikes against them carried out, though what success was achieved was never established. Owing to the nature of the country, close support bombing was not attempted. There existed at this time a complete lack of experience in this type of attack and the R.A.F. sections in the field did not possess adequate wireless communications with which to direct pilots on to selected targets. The air strikes which took place, and these were comparatively few, were rather the result of intelligence passed by the columns than of direct control from the ground.

40. Nevertheless, valuable lessons emerged from the Wingate expedition. The campaign afforded no opportunity for any of the more effectual activities allotted to the R.A.F. sections. Since this was not likely to be so in the future, the work and presence of these sections were regarded as an essential part of long range penetration.

Summary of the Wingate Expedition

41. It is for the Military analysts to decide whether the First Wingate Expedition was justified. Certainly the second foray, launched a year later, could never have taken place but for the first reconnaissance in force but it is debatable whether the second L.R.P.G. operation in 1944 was an essential factor in the re-conquest of Upper Burma. It probably was. Militarily, the operations described in the foregoing pages, achieved little. The equivalent damage to the Japanese war machine could probably have been done by a few bombers at a fraction of the cost. But the operation was worth much in publicity value and had a great effect upon the pessimistic peoples in India. Most important of all were the lessons learnt. These were indeed profound and had, without any shadow of doubt, a great influence on the future conduct of the war and tactics in Burma.

42. The nature of Burma's topography tended to force troops operating eastwards from India to depend entirely upon air and pack transport. The latter (mules, bullocks, elephants and coolies) was limited by the number of men and animals available, the inadequacy of their load and the slowness of their movement through difficult country. Moreover, for tactical reasons, it was essential that troops should not be encumbered by a pack train which prevented them from tackling natural obstacles they might otherwise be able to cross. Air transport, on the other hand, could overcome these problems. The Wingate Expedition clearly indicated that the answer to Japanese tactics of envelopment lay in air supply. This would enable ground forces to ignore land lines of communication which were so vulnerable in jungle country with the Japanese in the vicinity. But for air supply to be effective there could be no thought of enemy interference and thus air superiority was a pre-requisite to air supply.

43. Another important lesson of the Wingate campaign was that some method of rescuing sick and wounded personnel must be evolved. Before entering Burma, Wingate impressed upon all ranks that columns could not carry passengers and that should anyone become a casualty he would be left at a village with money and medical supplies to survive as best he could. This policy largely cured hypochondria, the prevailing malady of Englishmen and civilised nations, but must have had a bad effect upon morale. The answer to the problem was air evacuation. This was actually done on one occasion during the campaign. There were many possible landing sites in Burma which could be used by Dakota aircraft but hardly sufficient to ensure the evacuation of personnel from any area. It was obvious, however, that if suitable aircraft were made available, light aircraft capable of landing and taking off in a very confined space, it would be possible to evacuate personnel by air from almost any part of Burma. Apart from the evacuation of personnel who had become casualties deep in enemy territory, air evacuation by light aircraft could also prove invaluable during normal advances by main forces in country where communications were bad. For instance, a wounded or sick soldier could be flown back to a base area for expert medical attention in a very short space of time, whereas without air evacuation he might have to spend many days travelling by jeep or mule with the correspondingly less chance of survival.

44. That the war against Japanese in Burma was in no way analogous to contemporary warfare elsewhere, cannot be too often repeated. In Burma there were no great targets, the destruction of which would prove fatal to the enemy. Instead there were a multitude of tiny targets of small importance, most of them unrecognisable from the air. The Japanese in Burma lived widely and methodically dispersed and except on rare occasions such as Myitson and Wuntho, when he was caught out by guerilla observation, he was well protected from air attack. He was an adept at camouflage. Only an observer at close quarters on the ground could therefore help drive home an air attack. The air force was the most powerful weapon we possessed but only air force officers located with forward troops in the field, equipped with the means of controlling aircraft by wireless, could give it its proper effect.

SECTION X

AIR OPERATIONS JANUARY TO JUNE 1943

Policy and Organisation

IIM/a42/1a Report by A. V. M. Williams

1. Although limited operations had been carried out by the Air Forces during the monsoon of 1942 and there had been an increase in the tempo of air operations during the last quarter of that year, active offensive operations did not begin on any large scale until the beginning of 1943. This was partly owing to the re-organisation carried out at the end of 1942(1) and partly to the non-availability of landing grounds east of the Brahmaputra. During the first six months of 1943 the Air Forces in India had to fulfil a number of roles, some of which were designed to assist the land forces on the India-Burma frontier while others had a purely strategic objective. Operations in support of the Army in Arakan(2) and during the Wingate(3) expedition have already been sketched and it is now necessary to give an overall analysis of air operations in all spheres of activity.

2. Japan's problem was to hold captured territories extending over a perimeter more than 5,000 miles long and consisting largely of islands. In terms of troops and weapons she was naturally strongest at the extremities of the perimeter where she was in contact with Allied forces. In Burma, no less than elsewhere, the defence of her outlying territories depended upon her sea and air forces and it was precisely in these forces that Japan was weakest. Her ship building and air potential was small compared with the United Nations and not adequate to replace her losses. Thus the obvious aim of the Air Forces in India was to exploit these weaknesses. But first the air forces had to secure and maintain air superiority upon which not only did the entire defence of India depend, but also the ability of the air forces to wage an offensive air war against the enemy. Once air superiority had been achieved the two weak links in Japan's armour, her shipping and her air force, could be attacked. In addition it was very necessary to reduce Japan's ability to develop offensive intentions by attacking her internal lines of communications in Burma. Moreover, the air forces had to fulfil vital roles, complementary to primary operations, of photographic and over-sea reconnaissance, supply dropping, and clandestine work.

3. On 1 January 1943, operations were controlled by Air Headquarters, India through four Group H.Q's, Nos. 222 and 225 Groups, located at Colombo and Bangalore respectively, were responsible for general reconnaissance operations and for the air defence of their areas. Air Headquarters, Bengal under Air Vice-Marshal T. M. Williams(4) controlled the two composite Groups in North East India, No. 221 Group Calcutta and No. 224 Group at Chittagong.

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(1) See Pages 37 and 38

(2) See Section VIII

(3) See Section IX

(4) Who took over from A.V.M. D. F. Stevenson on 1 January, 1943.

4. The principle of operational control in the Bengal area was to direct operations from the Air Headquarters, located at Barrackpore, through groups and wings to squadrons. There were many disadvantages in this procedure, chiefly because it removed initiative from subordinate commanders. It meant that group and subordinate commanders were divorced from any degree of operational responsibility and the wide area over which operations took place, coupled with the acute difficulties of communication in India, made economical and rapid employment of the limited forces available virtually impossible. In the circumstances it was decided that Air Headquarters, Bengal should issue directives laying down operational tasks in general terms; these directives were based on the general policy decided upon by Air Headquarters, India. The directives of A.H.Q. Bengal defined areas of operations, objectives for attack, scale of effort and priorities, while the day to day control of operations was left to group commanders. A.H.Q. Bengal retained the right, however, to assume operational control fully or in part should the need arise or if a general concerted effort by all available air forces became necessary. This form of control was found to be most effective.

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Report by
AOC. Bengal

5. Co-operation with the United States Air Forces in India is said to have been ideal. Though they worked independently to the R.A.F., co-ordination of air operations was obtained through the medium of an operations conference held each day at which operations for the following 24 hours were discussed and plans agreed. This meeting also afforded an opportunity for discussion on enemy tactics and dispositions.

6. The forces available for air operations during the first half of 1943 was a comparatively small one. In January there were fifty-one squadrons(1) in India Command of which thirty-five were operational and deployed. By March the number of squadrons operational had increased to thirty-nine and in June, when units began withdrawing for rest and re-equipment, thirty-six squadrons were available for operations. The Tenth U.S.A.A.F. in India had eight squadrons in January 1943 and this number had increased to eleven by June. During the six months under review, the R.A.F. had an average of 301 aircraft available for operations and 13,024 sorties were flown for the loss of seventy-five aircraft of all types. The Americans had an average of 150 aircraft, they flew 3,451 sorties and lost seven aircraft in air combat.

The Maintenance of Air Superiority

7. During the period the fighter aircraft of India Command made a determined attempt to wrest air superiority from the Japanese and so secure base areas, lines of communications and forward positions from enemy interference. But the air battles which took place were inconclusive. In the first attacks carried out by the Japanese they achieved some measure of success and losses on both sides were approximately equal. They invariably attacked with fighter escort and since the Hurricanes were at a disadvantage when meeting the enemy at the same height or below, we did not attain the degree of success expected. In March, however, the warning system was developed sufficiently to give adequate warning, V.H.F. was installed in all Hurricanes, control and communications improved and as a result the Hurricanes were able to achieve better results.

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(1) This number includes seven squadrons of the Indian Air Force, one Canadian squadron and one Dutch.

O.R.B. & Appendices AHQ. Bengal & 222 Gp.

8. For the defence of India and Ceylon there were available, fourteen R.A.F. and two U.S.A.A.F. fighter squadrons. Five Hurricane units were located in Arakan and though intended primarily for offensive work they had to fulfil the dual function of defence and attack. In the Imphal area were two R.A.F. Mchawk squadrons and these too, had to combine the dual roles. Farther north still, in Assam, two American P-40 (Kittyhawk) squadrons defended air bases used by the American Air Transport Command aircraft engaged in flying lend-lease supplies over the "Hump" into China. At Calcutta, one Beaufighter and four Hurricane squadrons stood ready to ward off enemy air attack. The air defence of Ceylon was in the hands of three Hurricane squadrons. The east coast of India was entirely without air defence as there were insufficient squadrons available and the fighter strength had to be located in areas most likely to be bombed by the enemy. In the event, the deployment proved to be a wise one since the Japanese made no attempts at bombing targets on the east coast. Though the enemy did not attack Ceylon, and the three squadrons there had no operational work to do, the air threat to the island was ever present and the value of Ceylon to the Allies was great enough to warrant the retention of the fighter defence.

9. The bid for air mastery was therefore made in North-East India and over the India-Burma border. But enemy activity was surprisingly small bearing in mind the number of airfields and facilities available in Burma. He had about 250 aircraft of all types at his disposal in Burma and Siam and yet he mounted only 2,028 sorties in six months. This small effort can be attributed in the main to a shortage of reserve aircraft and to the constant bombing of his air fields by Allied bombers which kept the enemy air forces in Siam. This forced the Japanese to adopt the uneconomical policy of bringing forward squadrons to mount attacks and then to retire back to Siam again.

Enemy Attacks on Calcutta

IIJ50/47/8 Report by 221 Group

10. In December 1942 the enemy had carried out five raids on Calcutta, losing only one aircraft in doing so. The night air defence of the City had hitherto been a great concern but prospects seemed somewhat brighter when on 14 January, 1943 a Flight of No. 176 Squadron equipped with Beaufighter A.I. aircraft arrived from the Middle East. The December raids on Calcutta had had a very bad effect upon morale. It was anticipated, and promised by the Japanese, that there would be more and bigger raids during the January moon period. Following enemy broadcast propaganda, refugees began to leave Calcutta in their thousands. Labour problems became acute, some shops and hotels closed and decaying refuse which menaced health was piled high in the streets for want of labour to cart it away. It was evident that extreme measures would have to be taken if the morale of civilians was to be stiffened and a striking success by the R.A.F. was considered the best way to achieve this aim. If the local population could be convinced that the air defence of the City was efficient, a labour crisis might be avoided. On the other hand, further successful raids by the Japanese might well paralyse the life of the City.

11. The improvement of the night defences of Calcutta by the arrival of Beaufighters was most timely for on the night of 15/16 January a formation of three enemy bombers attempted a raid on Calcutta. A Beaufighter, which had been scrambled from Dum Dum airfield, intercepted the formation before it

reached the City and shot down all three aircraft in the space of a few minutes. When attacked the enemy bombers jettisoned their bombs and unfortunately two bombs fell on the Dunlop factory which is situated in agricultural country outside Calcutta. Two labourers quarters were demolished, eight persons being killed and fifteen injured.

12. Another success was recorded at night on 20/21 January when four Japanese Type 97 bombers attempted to bomb Calcutta. A Beaufighter of No. 176 Squadron was scrambled and controlled by G.C.I., contact was made with the enemy formation. As the Beaufighter closed in for the attack all four enemy aircraft opened fire and scored hits on the Beaufighter whose starboard engine was set on fire. But the pilot persisted in his attack and succeeded in shooting down two of the enemy and probably destroyed another before being forced to bale out. Both pilot and observer descended safely by parachute and returned to their Squadron. The Beaufighter had successfully diverted the enemy aircraft from their objective, some stray bombs fell on the oil plant at Budge-Budge, without causing any damage however, and no personnel casualties were reported.

13. The most significant feature of the two raids was the calmness of the civil population which had hitherto exhibited panic. That no mass exodus from Calcutta took place after the raids can be attributed to the excellent results obtained by the R.A.F. and to the early release of a communique. There is no doubt that successful raids on Calcutta would have paid handsome dividends and it was therefore surprising that the enemy made no further attempts to bomb targets west of the Brahmaputra. The Japanese Air Force, under the control of Japanese ground Army, was hindered and restricted at every turn by Army Commanders who had had no air experience. Strategic bombing policy was largely governed by high policy decided at Imperial Headquarters, Tokyo. Though there were many Japanese officers in the Third Air Army who realised the value of long range strategic bombing, they were hampered first by the lack of suitable aircraft, and secondly, by the refusal of superior Army formations to countenance operations other than those directly concerned with land battles.

IIJ54/8/5
SEATIC No. 248 - Apr. 1947

Enemy Activity in the Battle Areas
1 January to 13 March 1943

IIJ50/47/8
Report by AOC. Bengal

14. The success of R.A.F. Beaufighters had convinced the enemy that light raids on Calcutta were an unprofitable business and they henceforth confined their air offensive to the forward areas. On 3 January, Fenny airfield was raided by fifteen bombers and fifteen fighters by day and Chittagong was attacked by six bombers at night. These raids were evidently designed to hinder the support of the Army's Arakan offensive which had started in December 1942. The damage caused in the two enemy raids was very slight and casualties few but no interception had been made by R.A.F. fighters.

AHQ(I) WIS No. 51 - Jan. 1943

15. Apart from one small raid on Maungdaw on 11 January no further attacks were made by the enemy until 17 January when a minor air offensive began. This lasted until the 23rd and was a mixture of attacks on our forward positions in Arakan and on our airfields in the same area. On 17 January, Fenny airfield was raided by fifteen bombers and fifteen fighters; only slight damage was done though casualties amounted to over twenty. Five Hurricanes which intercepted shot down one enemy aircraft without loss. By night Chittagong was ineffectively bombed by four aircraft and at the same time the enemy dropped thirty bombs on a satellite airfield under

construction, evidently in mistake for Fenny. On 20 January a mountain battery in the Arakan hills was bombed and strafed by ten enemy bombers and six fighters and on the following day several small raids were made against our forward troops. Fairly heavy raids were again made on 22 January when nineteen enemy bombers operated against Donbaik, sixteen on Maungdaw and twelve on Buthidaung. No interceptions took place but the A.A. defences claimed four enemy aircraft destroyed at Buthidaung. On 23 January Fenny satellite airfield was bombed by nine bombers and Chittagong airfield by six. Both these raids took place at night and all enemy aircraft escaped unscathed. By day on the 23rd, Chittagong docks were attacked by eighteen bombers and four fighters, a raid which can be regarded as successful. Eleven Hurricanes intercepted, however, and shot down two enemy aircraft for no loss. On 24 January a single enemy aircraft approaching out of the sun with its engine shut off made a suicide dive on to a hospital ship off the Arakan coast. Six people were killed but the ship was towed successfully to port.

AHQ(I) WIS. Nos. 54-58 Feb. 1943

16. From 27 January until 20 February the enemy confined his air attacks to the battle area in Arakan. During this period ten raids were carried out which comprised some sixty-three bomber and forty-one fighter sorties. The raids were all on a small scale apart from attacks on 4 and 8 February when nineteen and eighteen bombers operated respectively. Two of the raids were intercepted by Hurricanes and they claimed four enemy aircraft destroyed, three probably so and two damaged for no loss. Though the enemy achieved little in these attacks it cannot be said that our fighters succeeded in making his raids prohibitive.

17. The enemy switched his air offensive to Assam on 23 February when he made a small scale attack on the U.S.A.A.F. airfield at Chabua. Twelve enemy aircraft attacked all of which escaped unharmed. Two days later, on the 25th, the enemy mounted a heavy attack against Sookerating airfield with twenty-one bombers and twenty-five fighters. Adequate warning enabled thirty-two P-40's successfully to intercept and split up the enemy formation. Numerous combats took place and the Americans claimed fourteen enemy aircraft destroyed and fourteen probably destroyed without damage or loss to themselves.

18. Following their attacks on the Assam airfields the enemy air forces returned to the Arakan on 28 February and 1 March. On both these days our fighters unexpectedly encountered the enemy. While escorting Blenheim light bombers on the 28th, eight Hurricanes were jumped by fifteen fighters and two Hurricanes were shot down. A patrol of Hurricanes on 1 March met an enemy formation and lost one of their number in claiming one enemy aircraft as probably destroyed. On 2 March a flight of ten enemy aircraft mounted a fighter sweep of Fenny and Chittagong without doing any damage. A brief lull of two days followed and on 5 March several air battles took place during which Hurricanes shot down seven enemy aircraft and probably destroyed six more for the loss of two Hurricanes. On 7 March Buthidaung was attacked by eighteen Japanese fighters, a raid which was not intercepted.

The Japanese Air Offensive
14 March to 11 April

AHQ(I) WIS Nos. 61-62 Apr. 1943

19. For the next six days the Japanese Air Force was not seen but on 14 March enemy activity was renewed over Arakan. This marked the beginning of an all out air offensive which lasted until 11 April, 1943. The offensive was not entirely unexpected since only a few weeks remained before the monsoon rains began and it was natural that the enemy should mount his maximum effort at the moment when his land forces began an advance designed to safeguard the Japanese hold on Akyab. The increase in enemy air activity was part of a definite tactical plan. He appreciated that the employment of his air forces would facilitate the land battle and it was necessary to divert our fighter strength from the offensive operations they were then undertaking. Since the beginning of the Arakan campaign our own air forces had been engaged in providing support for the land forces, and in attacks against enemy communications. These air operations were probably considered embarrassing to the enemy's counter offensive and it was necessary for him to divert our attention elsewhere. There seems little doubt that the enemy had studied our air force dispositions and methods of operations for some time. It was particularly noticeable that the timing of his earliest attacks on our airfields were arranged so as to take place immediately after a heavy effort by R.A.F. fighters in the battle area. The first objective of the Japanese Air Force, therefore, was to force our fighters off rhubarbs and close support and secondly to attack Army communications with a view to disorganising supplies.

20. The first phase of the enemy's air offensive began on 17 March with a small attack on our forward positions in Arakan and a raid by thirteen bombers and fifteen fighters on Ramu airfield. In the latter raid, two aircraft were damaged on the ground, a small oil dump was fired and only one fatal casualty sustained. Although there were forty to fifty craters in the vicinity of the strip it remained serviceable. Hurricanes intercepted and shot down one enemy aircraft, one Hurricane being lost in air combat. Two small raids were mounted by the enemy on 18 March, one against the U.S. A.A.F. airfield at Pazandaung and the other in the Arakan battle area. The J.A.F. then made four attacks on our airfields in Arakan which effectively reduced our offensive scale of effort. On 21 March, Fenny airfield was raided by twenty-one bombers and five fighters; here two Blenheims were destroyed on the ground, a supply dump hit and some casualties sustained. On 23 March the enemy sent nine fighters to machine-gun Dohazari airfield and they succeeded in damaging a few aircraft. An unsuccessful attack was made on Chittagong airfield on 24 March by three bombers and two fighters. Later in the same day a few bombs were dropped on a satellite airstrip south of Cox's Bazaar without causing any damage. The J.A.F. rounded off the day with an attack on Dohazari with six bombers and three fighters during which some aircraft were damaged on the ground. None of the raids was intercepted by our fighters.

21. Having accomplished his first task, the enforced re-orientation of R.A.F. fighter policy, the enemy's air offensive was switched temporarily to communications in Arakan. This phase in enemy air operations began on 26 March with an attack on Maungdaw town and jetty. Some twenty-five bombers and fifteen fighters were employed. Damage resulting from the raid included an ammunition dump hit with explosions taking place two hours after the attack, direct hits were scored on the jetty and a petrol store set on fire. Casualties amounted to thirty-three killed and 102 wounded.

Owing to atmospheric interference on the W/T, very little warning was received. Nevertheless, Hurricanes intercepted the enemy force and destroyed one enemy fighter and damaged a bomber without loss to themselves. Up to the end of March 1943 the Hurricanes had not achieved much success in air combat, but towards the end of that month they began to obtain better results. The Japanese Air Force, evidently over-confident, rashly despatched twenty-five unescorted bombers to attack Cox's Bazaar and shipping off the Arakan coast on 27 March. Eleven Hurricanes, which received only brief warning, intercepted and without loss or damage to themselves destroyed ten, probably destroyed three and damaged at least seven enemy bombers. A.A. from vessels in the Naf river shot down one bomber while A.A. on land claimed the destruction of another two.

22. The final phase of the Japanese air offensive consisted of attacks on all types of targets in the Arakan battle area. On 29 March, three enemy fighters with another six as top cover, unsuccessfully attacked a landing strip near Maungdaw, the raid being broken up by light A.A. fire. Later in the same day, nine enemy bombers escorted by two fighters bombed forward Army positions while twelve other fighters carried out an offensive sweep. No damage or casualties resulted and the fighter sweep was broken up by R.A.F. Mohawks who probably destroyed one enemy fighter. Two airstrips in the Ramu area were the targets for a force of fifteen enemy bombers and ten fighters on 30 March and though considerable damage was sustained the airstrips remained serviceable. Early warning enabled Hurricanes and Mohawks to intercept and five enemy aircraft were probably destroyed and ten damaged without loss. On 31 March, ten Hurricanes engaged an enemy fighter sweep of twelve aircraft and lost three of their number in claiming two of the enemy as probably destroyed.

23. Six enemy bombers reaped no success when they attacked Bawli Bazaar on 1 April. Later in the same day Fenny airfield was bombed by twenty-seven enemy bombers escorted by eight fighters. Adequate early warning enabled Hurricanes to gain the vital advantage of height and four bombers were shot down, four probably so and several others damaged. One Hurricane was shot down but the pilot escaped. The J.A.F. achieved little when on 2 April he attacked Maungdaw jetty and shipping in the Naf river with a force of eighteen bombers and six fighters. The following day four enemy reconnaissance aircraft were active principally over our airfields in Arakan. This usually heralded attacks and on 4 April it came as no surprise when Doharazi airfield was raided by twelve bombers and ten fighters. Good warning was received but only four of eleven Hurricanes scrambled intercepted. Also on the 4th a force of ten enemy fighters were active over our forward airfields. In numerous dog-fights, two of the enemy were claimed as destroyed and two damaged for no loss. While these air combats were taking place, Buthidaung was bombed by six enemy aircraft. This tactic of making fighter sweeps to detract attention from bombing raids was again adopted on 5 April. Maungdaw was attacked by eighteen bombers and six fighters with some success. Simultaneously a force of fifteen to twenty fighters approached Chittagong. Nine Hurricanes intercepted the fighter sweep and claimed two enemy aircraft probably destroyed and nine damaged. On 6 and 8 April, the J.A.F. attacked Agartala and Dohazari airfields with formations of some twenty escorted bombers. Neither raid was intercepted, some damage was done to airfield installations and a

Blenheim destroyed on the ground. The intensive air offensive was wound up with two attacks on shipping off the Arakan coast on 9 and 11 April, and a fighter sweep of Chittagong on the 9th. No damage was done to shipping but during the fighter sweep, two Hurricanes were shot down without inflicting loss upon the enemy.

24. 11 April marked the end of intensive air operations by the enemy. He had been operating at maximum effort and some of his squadrons were withdrawn from the more advanced bases in Burma, a policy which was influenced by a deterioration in the weather and the fear of Allied bombing attacks during the full moon period of April. The majority of air raids during the enemy air offensive from 14 March to 11 April were carried out by light bombers escorted by fighters. On three occasions, however, twin-engined heavy bombers were used in force. Twenty such aircraft operated against Fenny on 21 March, twenty-five also against Fenny on 1 April and eighteen against Agartala on 6 April. Over the period, the J.A.F. scale of effort was 215 sorties by light bombers, seventy by heavy bombers and 280 by fighters. Enemy losses(1) were twenty-three aircraft destroyed, twenty probably so and forty-five damaged. In addition A.A. claimed 3-3-9. R.A.F. losses were fourteen fighters destroyed and twelve damaged. It is interesting to note that the Japanese radio gave their own losses at forty-six aircraft and they claimed 416 R.A.F. aircraft destroyed, more than the total number of aircraft in Bengal.

Enemy Activity in the Forward Areas
12 April to 30 June, 1943

AHQ(I) WIS No. 66 April '43

25. After 11 April the enemy air effort fell away and only sporadic attacks were carried out. No further raids were made by the enemy until 19 April when two aircraft dropped nine bombs east of Maungdaw inflicting seventeen casualties. The J.A.F. reverted to their original policy of bringing up air forces from rear bases to carry out one or two attacks and then retiring out of range of our bombers. Thus two raids were made on Imphal. On 20 April, eighteen heavy bombers and twenty fighters dropped bombs along the Imphal-Ukhrul road where troops and a large number of civilians were billeted. There were heavy casualties, about 100 persons being killed. Of ten Mohawks scrambled, four made contact with the enemy and probably destroyed two of them for the loss of two Mohawks. On 21 April a force of twenty-seven bombers and sixteen fighters attacked Imphal town. Casualties were light but considerable damage was done including the destruction of the R.A.F. Filter Room, two engineer store rooms, a hospital ward, some small military buildings and a number of bashas. Nine Mohawks intercepted and claimed one enemy aircraft probably destroyed while A.A. shot down two more of the enemy formation.

AHQ(I) WIS No. 67 Apr. 1943

26. In Arakan there was a marked decrease in activity in the enemy's support of land operations. This was in line with the falling off in the land fighting. The decrease in enemy effort enabled Hurricanes to operate offensively over the Arakan battle area. The lack of opposition encountered(2) was evidently owing to the fact that the Japanese had few reserves to call upon while his squadrons were being rested after their intensive operations. No doubt

(1) These claims are subject to review when Japanese documents have been examined.

(2) See also Appendix 13 para. 28

his air operations imposed a considerable strain on his resources and his lack of effort was obviously a matter of necessity rather than choice.

AHQ(I) WIS No. 68 Apr. 1943

27. After a brief lull in large scale attacks, enemy activity flared up again and another phase in what Tokyo called "The Spring Campaign of Annihilation" commenced. As before, Japanese attacks were mainly directed against our forward airfields and lines of communication. While their raids did not reap much reward the enemy once again showed much ingenuity in splitting up and diverting the effort of R.A.F. defensive fighters. In the Arakan the enemy mounted three small attacks on 1 May and two on 3 May. His main effort, however, was against Dohazari airfield which was attacked by formations of twenty bombers on 2 and 5 May. In the first attack, two Blenheims were destroyed on the ground and the runway damaged. Hurricanes claimed one enemy aircraft destroyed and two damaged for the loss of one Hurricane. The second raid on Dohazari was less successful, most bombs fell in the village causing some casualties. Though Hurricanes were airborne they did not make contact with the enemy.

28. Enemy air activity again fell away after 5 May and apart from one small raid on Bawli Bazaar on 7 May no offensive operations were undertaken until the 20th. On that day a small raid was made on Army positions in Arakan. A combined air offensive(1) by the R.A.F. and U.S. A.A.F. against enemy lines of communication was carried out between 18 and 20 May and this stung the J.A.F. into retaliation. On 21 May as a counter to operation "Wimpole" he sent eighteen fighters to machine-gun the steamer anchorage at Cox's Bazaar, but he achieved nothing. The same formation then split into two sections, one going to Ramu landing ground, without carrying out an attack, however, and the other returned to Cox's Bazaar where a Blenheim was intercepted and shot down into the sea. The object of this fighter sweep was probably to intercept Allied aircraft engaged in attacks on enemy communications. But Wimpole had been concluded. The enemy did, however, evoke some activity by Hurricanes who intercepted the enemy sweep and destroyed one fighter, damaged two more for the loss of one Hurricane. A.A. guns were also in action and they claimed four enemy aircraft destroyed.

29. Still anticipating further Allied attacks on his communications, the J.A.F. continued their attacks on airfields. On 22 May Chittagong airfield was raided by twenty-five bombers and eleven fighters. One Hurricane was destroyed on the ground, six other Hurricanes and one Wellington, all of which were unserviceable at the time of the raid, were damaged. Adequate warning enabled nineteen Hurricanes to intercept and they shot down seven of the enemy probably destroyed two others and damaged seven for the loss of two Hurricanes and one pilot. No further attacks developed until 29 May when Chittagong was again the target for fifteen bombers and twenty fighters. Damage was not severe, a few huts were burnt out, one Vengeance aircraft destroyed on the ground and two others damaged. Hurricanes received 38 minutes warning and intercepted the enemy formation before the attack developed. The R.A.F. claimed six enemy aircraft destroyed, four probably so and three damaged for the loss of two Hurricanes. In both these raids on Chittagong, Hurricanes had the advantage of height with the result that the enemy suffered fairly heavy casualties.

(1) For an account of operation Wimpole see Section VIII Pages 83-85.

30. The breaking of the monsoon over Arakan brought the Japanese air offensive to a standstill and apart from occasional reconnaissance activity no further sign was seen of the J.A.F. As was their usual wont they retired for the monsoon.

Summary

31. Some reports of air operations indicate that complete air superiority was achieved over the India-Burma frontier during the first half of 1943. Such statements cannot, however, be reconciled with the results obtained by the R.A.F. in air combat. By June 1943 the Allied air forces did, in fact, rule the skies over Burma but this situation was really the result of the Japanese custom of retiring for the monsoon rather than the result of air battles fought during the dry season. It is reasonable to say that honours were evenly divided. The enemy lost about fifty-eight aircraft destroyed, forty-two probably destroyed and ninety damaged during the period under review, while the R.A.F. lost seventy-five aircraft. The R.A.F. operational effort was, however, much greater than that of the Japanese Air Force. In air combat the enemy shot down thirty-one R.A.F. fighters.

32. Allied fighters defending North East India could not stop the Japanese from attacking when and where he liked, nor did they succeed in making his raids prohibitive. Moreover, fast enemy reconnaissance aircraft could rove at will over the forward areas and as far west as Calcutta with impunity. This does not savour of air superiority. But in appraising the Allied fighter effort it must be remembered that the battle front was some 700 miles long and it was impossible to provide adequate fighter defences over the entire area with the force available. The difficult nature of the terrain too, had its adverse affect upon air defence; the early warning system could rarely provide sufficient warning of impending raids for fighters to gain the tactical advantage of height. The only effective tactic against the more manoeuvreable Japanese fighters was that of "Dive and Zoom" - to attack from above by diving at high speed on to enemy aircraft and then to use the increased speed of the dive to climb above the enemy and so repeat the manoeuvre. To mix it with Japanese fighters was to court disaster since the enemy could always evade an orthodox attack and in turn could get themselves firmly attached to the Hurricanes tail. It is therefore to the credit of the Hurricane pilots that they achieved such comparatively good results. Their morale was good and they courageously attacked the enemy even if they were outnumbered and at a tactical disadvantage.

33. A study of the operations(1) of the Japanese Air Force over Burma reveals certain habits and tendencies which are worth noting as characteristic. From December 1941 onwards, airfields were the favourite targets for Japanese bombing raids, their aim being to paralyse Allied aircraft and air potential. This policy was particularly effective during the earlier campaigns when we possessed but a few ill-equipped airfields which were vulnerable to air attack. During the dry weather of 1942-43 on the India-Burma frontier, this policy was less effective and the Japanese did not succeed in delivering a knock out blow at any airfield in the area of operations. This was particularly tragic for the Japanese since by their blind adherence to an inflexible policy they ignored for the most part such tempting strategic targets as the port of Calcutta and the oilfields at Digboi in Assam. But a

(1) See Appendix 13 para. 6

deficiency in the Japanese Air Force was the absence of an effective long range bomber. The standard Army Type 97 heavy bomber, so-called by the Japanese, was really the equivalent to an R.A.F. medium bomber. It had a useful radius of action in theory but could not deliver an effective load at the end of it and in practice was never used at its full range.

34. The other favourite form of Japanese air operations, close support, absorbed 20 per cent of their total effort. While the Japanese Air Force was engaged in tactical operations in Arakan in support of their land forces, other and perhaps more worthwhile targets were left alone. For instance, during the Wingate Expedition only two operations were carried out by the J.A.F. one of which was a leaflet raid. Nor was there any interference with Wingate's supply dropping arrangements. Had the Japanese succeeded in making R.A.F. sorties prohibitive, the fate of over 3,000 British-Indian troops would have been sealed. That the Japanese let such delicious targets as unarmed transport aircraft, thinly escorted, slip through their hands can be attributed in the main to the status of his air force - that of an adjunct of the land forces, and to the outlook of the J.A.F. commanders who had "No real knowledge of engines or of real flying".

35. Important Japanese bomber operations generally followed a fairly regular and characteristic pattern. Firstly, units taking part would assemble at forward bases. Then the proposed target would be photographed by reconnaissance aircraft after which two or three attacks in quick succession would be made. The force would then retire to rear airfields. The policy of moving air units into forward bases just prior to operations was designed to achieve surprise in that they kept their aircraft outside the range of Allied photographic reconnaissance until the last moment. This advantage was partly negatived by their preliminary reconnaissance flights which gave unmistakable indication of the area of an impending raid.

Air Transport Operations

36. Although the results of the campaigning season of 1942-43 were inconclusive, the period witnessed a further unfolding of air transport resources which in the light of later events were significant. The lonely garrison at Fort Hertz continued to derive its supplies by air, a matter of importance since the Fort provided in return the only emergency landing ground on the India-China Air route. A further military commitment was added by the necessity of maintaining by air the British-Indian forces holding isolated positions at Tiddim and elsewhere in the Chin Hills whence they were able to threaten the Japanese established in the Chindwin valley. A network of radar stations and observer posts keeping watch in the Chin and Naga hills and in the Fort Hertz area, which covered the approaches from Bengal and Assam from the east, were dependent upon air supply for their survival. In the contemporary and abortive operations in Arakan no appreciable part was played by air transport. But the first Wingate Expedition was maintained behind enemy lines in North Burma from February to May 1943 completely by transport aircraft of the R.A.F. who had learnt the art of dropping by night as well as by day. The support of the Wingate foray was an impressive and auspicious achievement and the particularly gallant feat[1] of the pilot who landed his Dakota

(1) See Pages 95 - 96

on an improvised landing ground, safely to evacuate seventeen sick and wounded persons, was a harbinger of widely extended operations during the next campaigning season.

O.R.B. 31 & 194 Squadrons Jan.-Jun. 1943

37. In comparison with subsequent years, the air transport effort in Burma from January to June 1943 was small, yet hardly less remarkable. The highly complex ground organisation, which later supported the air transport force, had not yet emerged; maintenance facilities were rudimentary and aircraft and aircraft spares in short supply. In spite of the many difficulties confronting the air forces the evolution of this new dimension in warfare continued during the early months of 1943. In January 1943 an average of five aircraft dropped 168 tons of supplies. By June the totals had risen to fifteen and 386 respectively. In six months the small detachments of Nos. 31 and 194 Squadrons, operating an average of ten aircraft, flew 717 sorties and dropped 1,565 tons of supplies. This effort was achieved for the loss of only two aircraft and it is unlikely that the enemy was the cause of their disappearance.

File AHQ(B) 80/5/Air Encl. 17

38. The commitments of the R.A.F. transport aircraft were many. There was a continuous heavy air lift for Army detachments in the Chin Hills. The Chinese-American units in the Hukawng valley, and Sumprabum and the British garrison at Fort Hertz had to be maintained. But the Army's demands for air lift outstripped that which could be carried in the aircraft available and it was necessary for a time to restrict the Army's demands to within the resources available. Moreover, the Wingate Expedition, which began in February, resulted in some diversion of effort. The Americans were therefore asked to assist in the air supply of forces in Burma. But their transport aircraft were busily engaged in carrying war materials over the "Hump" and it seemed at one time that the 14th U.S.A.A.F. in China might have to cease operations owing to the inability of American transport aircraft to supply them with sufficient aviation fuel. And so during January the R.A.F. struggled to fulfil the requirements not only of the British-Indian forces but also those in the American operational area.

File AHQ(B) 80/5/Air Enc. 33A and 35A

39. Towards the end of February, when an American transport squadron became available for supply dropping operations, it was agreed that the U.S.A.A.F. would take over the Hukawng valley commitment, thus leaving only the Fort Hertz and Sumprabum tasks to the R.A.F. in North Burma. This eased the burden somewhat but resulted in no diminution of effort since the Army's requests increased proportionately. With the reduction of commitments in North Burma, six R.A.F. transport aircraft were based permanently at Agartala whence they came under the direct orders of No. 170 Wing. Hitherto, aircraft had been based at Agartala, Din Jan and Tezpur and no co-ordination of effort had taken place. It was arranged that the supply of Sumprabum and Fort Hertz would be carried out by the aircraft at Agartala, using Tezpur as an advanced base for these operations. In this way IV Corps always knew what supply dropping resources were available and could detail priorities in conjunction with No. 170 Wing accordingly. Moreover, No. 170 Wing, primarily a tactical formation, could arrange fighter escort for supply dropping aircraft as required.

40. In March 1943 additional transport aircraft became available for operations and in April Dakotas began to make their appearance with a corresponding increase in air lift. During the period under review the R.A.F. dropped 945 tons of supplies in the Chin and Naga hills, 303 tons to Wingate's force and 154 tons in North Burma. In addition 163 tons of

supplies were flown in to Fort Hertz.

Strategic Bomber Operations

JPS. Paper No. 25 (Revise) Oct. 1942

41. The policy for the R.A.F. strategic bomber force in North-east India was related to the general policy for the winter of 1942-43 laid down by H.E. the Commander-in-Chief. This was to develop communications and establish our troops in favourable positions for an attack on Burma after the 1943 monsoon, and to bring the enemy into battle with the object of using up his strength, particularly in the air. The ability of the Japanese to invade India or to launch an offensive against our forward positions depended to a large extent on the creation of a favourable air situation. It was thought that if the enemy could be worn down they could be prevented from obtaining the requisite degree of air superiority with which to develop offensive intentions. Conversely, Allied ability to initiate offensive operations depended upon the degree of air superiority the Allied air forces could achieve.

42. In the winter of 1942-43 the strength of the Allied bomber force was relatively weak and no appreciable increase in strength was expected to materialise before the monsoon. It was thought that if a policy to conserve the bomber force was adopted the enemy would suffer less interruption and would be able to use his forces against the Allies in more favourable circumstances. Moreover, he would be able to reinforce and accumulate reserves in Burma unhampered. The obvious course, therefore, was to use the small R.A.F. bomber force offensively in attacking selected targets in circumstances tactically suitable. Enemy occupied airfields and airfield installations in Burma therefore became first priority for R.A.F. light and medium bombers and Rangoon for heavy bombers. Enemy communications were given second priority. This policy was not, however, designed to preclude the attack of suitable opportunity targets of purely military or naval significance. It was designed to guard against the possibility of dissipating the effort of the minute R.A.F. bomber force against a multitude of tiny targets. The main effort against airfields and communications had the effect of striking at the Japanese air organisation for reasons already mentioned. Rangoon, the only large strategic objective in Burma, was regarded as a communications target since all supplies and reinforcements for the Japanese land and air forces in Burma had to pass through the port. Any interruption in the flow of these supplies would, therefore, assist the Allied operations as a whole. Rangoon, however, was outside the range of R.A.F. light and medium bombers and only a handful of Liberators were available to probe that far. It was the U.S.A.A.F. who mounted the major effort against Rangoon.

JPS Paper No. 46

43. During November and December 1942, over 180 sorties had been made in attacks on enemy airfields. Although this had been the primary task of bombers an equal number of sorties against lines of communication and against targets of military and naval significance had been flown. In January, consideration was given to an alternative bombing policy in making communications targets first priority. No change was, however, made. The volume of Japanese supply traffic in Burma was small in relation to the facilities available which were sidely dispersed. The only big target - Rangoon - was already included as a primary target for heavy bombers. While the volume of Japanese supplies over lines of communication remained small, attacks were not considered worthwhile since such operations could only be mounted at the expense of operations against the Japanese Air Force.

The attacks on airfields had already reaped a dividend. From intelligence sources it appeared that the J.A.F. intended to operate against India, not only from second line and rear airfields in Burma, but also from advanced landing grounds. By the end of 1942 our attacks(1) had forced the enemy to adopt the policy of retaining his air forces in rear areas. While it was agreed that the R.A.F. should lose no opportunity of attacking favourable targets on enemy lines of communication, attacks on airfields were considered more important. The advantages gained from this bombing policy were threefold. Firstly, it became more and more difficult for the enemy to intercept R.A.F. and U.S.A.A.F. aircraft over central and Upper Burma; secondly, it reduced the weight of attack which could be brought to bear against India; thirdly, it enabled the air forces to operate with more security from advanced airfields in North-east India which was important since there were so few.

O.R.B.
AHQ. Bengal
Jan-June '43

44. Night bomber operations during the first half of 1943 were greatly hampered by the smallness of the R.A.F. force. The average availability of the R.A.F. in Bengal consisted of four heavy bombers, thirteen medium bombers for night operations and fifty light bombers for day attacks. Since the light bombers were usually engaged in operations in the battle areas, purely strategic operations had to be carried out with an average of seventeen aircraft. The Americans possessed a more powerful strategic force of some thirty heavy and thirty-four medium bombers. From January to June 1943, R.A.F. heavy and medium bombers flew 477 sorties and dropped 762 tons of bombs, R.A.F. light bombers flew 2,577 sorties, mainly in tactical operations, and dropped 894 tons: this effort cost the R.A.F. eighteen aircraft. In the same period the Tenth U.S.A.A.F. flew 2,155 sorties with B-24 and B-25 aircraft and dropped 2,773 tons of bombs for the loss of six aircraft.

45. The R.A.F. began the year's strategic bomber offensive on the night of 4/5 January with a raid by seven Wellingtons on Mandalay, the hub of the Burmese railway system and the most vulnerable point of the Japanese north-south supply line in Burma. Between 7 and 15 January, five attacks were made on Akyab island with a view to disrupting communications, lowering morale and preparing the way for a subsequent assault on the island by our land forces. These attacks comprised sixteen sorties by Wellingtons and eight by Liberators.

46. Following the Japanese raids on Calcutta in mid-January, the R.A.F. night bomber effort was directed against the No. 1 Priority target - airfields - in the hope that the J.A.F. might be deterred from mounting long range bombing raids. Commencing on the night of 16/17 January and continuing until 26/27 January, R.A.F. Wellingtons and Liberators carried out four attacks against Toungoo airfield and three against Heho, comprising some forty-nine sorties in all. Since the enemy did not seem disposed to strike again at Calcutta, the night bombers were switched to Akyab. Four raids were made on the island between 28 January and 4 February, three by Wellingtons and one by Liberators.

47. Throughout January, night operations were hindered by maintenance difficulties. During February, however, the bomber effort increased and attacks were more widely dispersed and at a longer range than hitherto. The increased effort

(1) See Appendix 13 paras. 6 and 20.

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was largely owing to improved servicing facilities and the excellent work of maintenance crews. Bomber operations during February 1943 was again restricted to two squadrons, No. 99 equipped with Wellingtons and No. 159 with Liberators. Experience was given to freshmen crews of No. 99 Squadron by giving them Akyab as a target which provided readily recognizable pin-points and which was not heavily defended. Effort against airfields and Akyab was maintained and also against enemy lines of communication in Burma. Railway targets were bombed at Mandalay and Sagaing and on 28 February five Liberators made the long flight to Moulmein to bomb the railway junction there. The Japanese had shown no inclination to repair the Ava bridge at Sagaing, which had been destroyed during the retreat in 1942, and were using the alternative route via Myitnge and Sagaing. A number of raids were directed against these targets culminating in direct hits by the U.S.A.A.F. on the Myitnge bridge when two spans were displaced. Farther south R.A.F. Liberators delivered two effective attacks on Rangoon docks on 4 and 7 February. The railway line connecting Rangoon and Mandalay, which was the life-line of the Burma transport system, was also attacked at vulnerable points notably at Thazi junction which was raided by eight Wellingtons on 24/25 February.

48. Although the number of operational hours flown by the R.A.F. medium and heavy bombers during March showed a marked increase over previous months, the tonnage of bombs dropped fell sharply. This apparent discrepancy can be accounted for by the deteriorating weather conditions over Burma. Many aircraft failed to locate their targets and bomb loads were frequently brought back. The night bomber effort continued on similar lines as hitherto. Airfields received fourteen raids and railway targets seven. Of the latter, Mandalay was visited three times, Sagaing, Meiktila, Prome and Thazi once each. Akyab was bombed three times and on 17/18 March, three Wellingtons bombed Bhamo as cover for a Hudson engaged on clandestine work.

49. During the moon period of April 1943, airfields constituted the principal targets for the augmented bomber force of three squadrons. On the darker night effort was mainly against focal points of communication. P.R. cover revealed a concentration of enemy aircraft at Meiktila and its satellite Kangaung. The former was bombed twice on 3/4 and 4/5 April and the latter on 20/21 and 22/23 April. Other raids were made against the airfields at Heho and Magwe (twice), Toungoo and Shwebo. Rangoon was bombed by six Liberators on 5/6 April and by small formations of two aircraft on three other occasions. As usual Akyab received attention, three attacks being made against the island in April.

50. In May 1943 effort was directed against communications targets at first, then on airfields during the moon period and back again to communications towards the end of the month. Airfields were bombed six times, eleven raids were made on communications targets, two against Akyab and a small raid on Rangoon by Liberators. During the third week in May, all bomber effort was absorbed by operation Wimpole(1).

51. Operations during June 1943 were drastically curtailed by the onset of the monsoon which broke over eastern India bases in mid-June. As a result operations were on a much reduced scale and such attacks as were mounted suffered

(1) See Section VIII Pages 83-85.

interference. In May 177 tons of bombs were dropped by R.A.F. medium and heavy bombers whereas in June the total was only thirty-nine tons. The one attack on an airfield was abortive owing to adverse weather. Mandalay and Sagaing railway targets were the objectives on 12/13 June and 21/22 June but only the first was effective. Other raids included Akyab and Buthidaung.

52. During the six months under review, R.A.F. heavy and medium bombers attacked airfields in the course of forty-four raids, communications targets were bombed on twenty occasions, Akyab twenty-four times and Rangoon six. The heaviest attack was on 22/23 March against Kangaung airfield when fourteen Wellingtons were despatched of which ten actually bombed the target.

53. The American bomber effort was kept alive with those admirable weapons, the B-24 and B-25. The Japanese found that the port of Rangoon and the approaches thereto were the special province of U.S.A.A.F. heavy bombers, though on occasions they attacked communications targets, notably the Myitnge bridge and Gotkeik viaduct. American medium bombers devoted most of their effort to communications targets from Rangoon northwards. Bridges constituted their principal objective but enemy camps, river shipping and mechanical transport came into their orbit whenever opportunity offered. In considering the number of aircraft they had available (an average of sixty-four bombers) the Tenth U.S.A.A.F. produced a creditable effort. Bomb tonnages increased considerably, in January 1943 they dropped 180 tons and in May 1,250. The greatest proportion of the bombs dropped by the Americans was aimed at railway targets (1,400 tons), enemy supply dumps and camps (1,025 tons), harbours 279 and airfields sixty-nine tons. Only six bombers were lost in the course of these operations although they were all carried out in daylight.

Summary

54. At present it is difficult to assess the achievements of the Allied strategic bomber force since the results of these operations will only become apparent when information is forthcoming from Japanese sources. Unlike the battles on sea and land, air operations are continuous affairs and are rarely endowed with graphic battle names. In Burma during the first half of 1943 the bomber offensive reached no conclusion, it was the beginning of a war of attrition which continued until the last shot was fired in August 1945. Thus it would be profitless here to attempt an analysis of strategic bomber operations. Such statements as "All bombs fell in the target area" and "Several fires and two explosions were observed" mean little unless related to an overall assessment of how such bombing assisted in the ultimate defeat of the enemy.

55. This much can be said, however, the bomber offensive up to the end of June 1943 was neither heavy nor sustained and it is unlikely that the enemy regarded the threat as a serious one. Had he thought so he would have paid more attention to the problem of intercepting our raids. There is no doubt, however, that the enemy's night fighter defences were poor owing to the lack of technical knowledge and necessary equipment and this would explain why the R.A.F. night bombers were left virtually unmolested. But it is somewhat surprising that the U.S.A.A.F. bombers operating by day were allowed to rove at will over Burma, even as far afield as Rangoon and Moulmein, without any serious attempt by the Japanese to stop them. It should be mentioned, however, that on such occasions as the J.A.F. tried to intercept the American bombers the enemy had the worst of the encounters.

Clandestine Operations

File AHQ(I) No. 5123 Encl. 18A

56. Though all four sorties attempted by the aircraft of the Air Landing School during 1942 had met with success, some adversity was experienced in the first half of 1943 which emphasised the limitations of the tiny R.A.F. clandestine organisation. The year started well, however, with operation Flimwell during which a Hudson operating from the advanced airfield of Dohazari, dropped two agents and six containers at a dropping zone twelve miles north-west of Bassein on 20 January.

File AHQ(I) No. 5123 Encl. 32A

57. The next operation, called Harlington, was planned to take place in two parts. In the Toungoo area of central Burma the presence of agents was required to report on enemy troop movements and airfield activity. During the first sortie, on 19 February, four agents and a W/T set were dropped by a Hudson while five Liberators provided a diversion by bombing Toungoo airfield. The second sortie, scheduled for 25 February, was also covered by Liberators but the Hudson, carrying six containers of supplies, failed to find the difficult dropping zone owing to haze and to cloud on the hills. Another attempt was made on 26 February and though the Hudson found the valley, visibility was so bad that ground signals could not be distinguished. The sortie was laid on again for 27 February and again on the following day but on each occasion weather prevented the aircraft from taking off. Although weather conditions were far from ideal on 1 March, the Hudson made another attempt to penetrate into the Toungoo area. On reaching the Irrawaddy valley the oil supply to the starboard engine failed and the aircraft was forced to return to base. Eventually the Hudson made a forced landing in a field some fifteen miles north-west of the Hoogli river. It was later patched up and flown out of the field but by that time the moon had waned and no further attempt could be made to complete the operation.

O.R.B. 321 Sqdn. Feb. and Mar. 1943

58. In Ceylon plans were made to complete operation Minerva(1) during the moon period of February 1943. It may be remembered that a reconnaissance party had been taken to Sumatra by a Catalina of No. 321 (Dutch) Squadron in December 1942 and that it had been planned to extract the party, or part of it, to report on conditions in Sumatra and the possibility of assisting prisoners of war to escape. A Catalina flying boat of No. 321 Squadron flew to the rendezvous off the coast of Sumatra on 20 February but failed to locate the party. Another attempt was made on 25 February the second pre-arranged date for rendezvous, but again no contact was made. The third and final date for the return of the party had been arranged for 20 March 1943, the following moon period, and again the Catalina made the 2,200 mile round trip without success. The agents were then given up for lost and it is believed that they were captured by the Japanese.

File AHQ(I) No. 5123 Encl. 38A and IIJ50/47/32

59. The struggle to complete Harlington continued during the April moon period. An attempt scheduled for 17 April was foiled by bad weather which also precluded a take off on the following day. On 19 April, however, the weather improved somewhat and though a Hudson was despatched it had to return after half an hour owing to technical trouble. Liberators again provided cover by bombing Toungoo airfield but their continued assistance became increasingly difficult as the requirements of clandestine operations could only be met at the expense of the bombing programme. A decision was

(1) See Page 70 paras. 63-64

therefore made for the Hudson to provide its own cover by leaflet dropping. After the abortive sortie on 19 April the Hudson was repaired and the sortie laid on for the 20th. But weather intervened. On the following day the aircraft became unserviceable and it was not until 25 April that another attempt could be made. On this occasion the port engine failed soon after taking off and the sortie abandoned.

File AHQ(I) 83/32/INT.

60. Notwithstanding the limited success of the R.A.F. Hudsons, the Clandestine organisations in India forecast further exploitation of this type of warfare. The limited range of Hudson aircraft had so far confined operations to Burma, except on the occasion when Catalinas mounted operation Minerva. An extension of operations to Siam, Mergui and Sumatra was deemed necessary and some thought given to the possibility of providing suitable aircraft for the task. Agents were required in Siam, in particular, since it was anticipated that during the monsoon of 1943, photographic reconnaissance aircraft would be unable to provide regular cover of the Bangkok and Moulmein areas. Agents constituted the only alternative means of checking enemy troop and shipping movements. Liberators, the only aircraft capable of making the trip, were not available and the project was shelved for the time being. The use of Catalinas for long range clandestine operations had already been tried with success and rather than forego the prospect of putting agents into enemy territory, an operation Breach was planned, subsequently to take place in the latter half of April, 1943.

O.R.B. 240 Sqdn. Apr. 1943

61. Two flying boats of No. 240 (G.R) Squadron which had been earmarked for operation Breach were flown from their base near Madras to Cocanada some 300 miles farther north. By the evening of 21 April, 1943 the Catalinas, K/240 and J/240 were ready for the operation. It was planned that they should deliver three agents and their equipment to Tavoy island in the Mergui Archipelago and provide a diversionary bombing attack. The round distance to be flown was 2,200 miles entirely over water. At 1350 hours on 22 April the two Catalinas took off from Cocanada and set course for Tavoy island. Eight hours later they lost each other although the intention had been to remain in company. The bomb carrying aircraft J/240 arrived at Tavoy island at 2348 hours and searched for K/240 until 0020 hours, 23 April, without success. K/240 reached the lower Burma coast some eight miles north of Tavoy island and owing to an error in navigation turned north instead of south and flew along the coast until recognising the mouth of the Tavoy river. The Catalina then turned south and reached Tavoy island at 0043 hours. The moon at the time was very high, covered by thin cloud which gave a diffused light. Though the pilot could not see the water he decided to land and three abortive attempts confirmed that there was a considerable swell running. On each occasion the aircraft bounced and had to be flown clear at full throttle. In view of the swell and also in consideration of the poor light, the local disturbance caused by repeated circuits and the absence of the bomb carrying aircraft, the task was abandoned. In the meantime, J/240 dropped four 250 lb bombs on Tavoy airfield. Both aircraft reached base after being airborne for over 22 hours.

File AHQ(I) 83/32/INT.

File AHQ(I) 83/32/Int.

62. The same two Catalina aircraft made a second attempt on 25 April, 1943. They took off from Cocanada at 1430 hours and flew in company to Tavoy island which was reached at 0001 hours on 26 April. This time the light was perfect, the sea was calm with no visible swell. K/240 did one circuit of inspection and then carried out a normal night landing. The drill for the launching of the agents, which had been planned

as a result of practice carried out at Madras, was rigidly followed with great success. Two rubber dinghies were launched and three agents and their equipment loaded into them. The flying boat took off again at 0023 hours, the whole operation taking only 12 minutes. In the meantime J/240 provided an excellent diversion in the alighting area and was actually above K/240 during the take off. J/240 then proceeded to Tavoy airfield and dropped 2,000 lbs of bombs on it. The return flight was uneventful, K/240 was waterborne at 0950 hours and J/240 just over an hour later.

IIJ50/47/32
Notes by Int. Branch H.Q. ACSEA 12 Jan. 1945

63. Although the R.A.F. had failed to complete operation Harlington, the potentialities of clandestine operations had been demonstrated sufficiently to warrant an extension of activity. The small detachments of aircraft from the Air Landing School were no longer adequate for regular monthly operations. Moreover, the primary role of the school was adversely affected by the continual withdrawal of aircraft and crews. Thus on 1 June, 1943, the second phase in clandestine operations began with the formation of No. 1576 Flight at Chaklala. The equipment of the new Flight consisted of six Mark II Hudsons and it seemed likely that henceforth operations would not be hindered by unserviceability.

File AHQ(I) 161/Int. Encl. 3A

64. During the moon period of June 1943, two sorties were carried out by No. 1576 Flight, one of which was successful. On 14 June a Hudson operating from Dum Dum completed operation Mahout I. At a dropping zone fifty miles north-north-west of Rangoon, one agent, a W/T set and one container parachuted to earth. As cover for the sortie, leaflets were dropped along the Arakan coast during both outward and homeward flights. The other sortie attempted in June was operation Harlington which had so often thwarted the efforts of the R.A.F. earlier in the year. Once again the sortie was carried out to the accompaniment of bombing by Liberators on Toungoo airfield. A Hudson of No. 1576 Flight carrying six agents and six containers took off from Dum Dum but lightning and cumulo nimbus cloud was seen all along the Arakan coast which forbade penetration into the Irrawaddy valley. The same sortie was laid on again for 21 June but was cancelled owing to bad weather. No further attempts were made during the period under review.

Summary

65. The work of the R.A.F. in the sphere of clandestine operations was perhaps small but the minor successes in the face of so many difficulties augered well for the future. The faults were obvious and could be remedied in due course. The detachments of single aircraft from the Air Landing School had little chance of success owing to the uncertainty of serviceability and the weather. Operations of this nature demanded, above all, reserve aircraft so that advantage could be taken of favourable weather conditions.

66. The inability of the R.A.F. to attempt long range operations into Siam indicated the need for suitable aircraft. But none were available. The long range operations carried out by Catalina aircraft of Nos. 321 and 240 Squadrons, however, heralded the extensive use of flying boats for clandestine operations and greater use was subsequently made of them.

67. Intelligence of the enemy was notoriously bad during the early part of the war in the Far East and clandestine operations provided one effective method of solving the problem. But these operations were still in their infancy

and as time went by, clandestine warfare was to make a potent contribution to the war, not only in the gathering of intelligence but in other equally important fields.

Photographic Reconnaissance

O.R.B. No. 3 P.R.U.

68. Considering the amount of photography required, the resources in aircraft were exceptionally meagre. Responsibility for aerial photography rested with No. 3 Photographic Reconnaissance Unit located at Alipore, a unit equipped with a mixed bag of aircraft - Mitchells for long range work with Hurricanes and Spitfires for operations nearer home. No. 3 P.R.U. had an average of only eight aircraft available for operations, the Americans had four P-38's. From January to June 1943, the R.A.F. in Bengal flew 383 sorties, eighty-two of them with Mitchells and 301 with Hurricanes and Spitfires. The U.S.A.A.F. flew fifty-one sorties.

IIJ50/47/8 Report by AOC. Bengal

69. On 25 January 1943, No. 3 Photographic Reconnaissance Unit was re-organised on a squadron basis, the unit being re-designated No. 681 Squadron. From regular P.R. sorties the R.A.F. squadron provided forecasts of impending enemy air attacks with fair accuracy and provided useful data for Allied bomber strikes. Hurricanes and Spitfires expended most of their effort in central Burma where enemy airfields, communications, supply dumps and camps were photographed. These operations comprised some 191 sorties. The Arakan coast too was covered by single engined aircraft in the course of seventy-one sorties. Mitchells ranged farther afield, Rangoon was photographed on twenty-one occasions, Moulmein seventeen times and five sorties were flown to Siam.

File AHQ(B) 2706/Int.

Mitchells also covered the Andaman islands at regular intervals in order to observe shipping movements. These sorties, however, invariably forewarned enemy shipping and the subsequent attacks by the U.S.A.A.F. were often fruitless. These Mitchell sorties to the Andaman islands produced a minor aircraft crisis as they were the only aircraft available to fulfil the task. There were many long range commitments and the shortage of Mitchell aircraft placed too great a burden upon the long range element of No. 681 Squadron. Moreover, in May 1943, low-level obliques were required of the Andaman islands for planning purposes in connection with the proposed Allied invasion of the islands at some future date. To hazard the few Mitchells available (at one time only one was serviceable) was an unjustifiable risk.

Ibid

70. In order to augment the long range P.R. effort, and so relieve No. 681 Squadron of its onerous commitments, it was planned that Liberators of No. 160 Squadron based in Ceylon should be used for photographic reconnaissance. Although this decision was made in April 1943, the Liberators for technical reasons were unable to commence operations until the end of May. Thus all twenty-one sorties flown to the Andaman islands were carried out by Mitchells. The Liberators, however, proved to be a great asset and areas hitherto outside the range of R.A.F. photographic aircraft were embraced. No. 160 Squadron began photographic operations on 24 May when Sabang in Sumatra was photographed. On the same day another Liberator attempted a photographic reconnaissance of the Andamans but had to return to base owing to engine trouble. By the end of June 1943, Liberators had flown sixteen sorties; Northern Sumatra was successfully photographed eight times, the Nicobar islands once and Phuket island once. The other six sorties were abortive.

71. Of the 399 sorties flown by No. 681 and 160 Squadrons, fifty-two were completely unsuccessful mainly owing to adverse weather. During January, February, March and April when

weather conditions were generally good, only twelve sorties were abortive, some of these due to technical trouble, but in May and June much cloud was encountered and forty sorties were completely abortive.

72. Though comparatively successful, photographic reconnaissance operations carried out during the first half of 1943 were restricted in scope owing to the shortage of aircraft and the unsuitability of certain types of aircraft used. True the Spitfire was an admirable aircraft for short range work but the Hurricane was too slow and had insufficient range for the job. Fortunately, the enemy made no serious attempt to interfere with our reconnaissance and only one aircraft, a Mitchell, was lost. But the indolence of the Japanese Air Force could not be taken for granted and a determined effort on his part might have seriously hampered P.R. operations. The greatest need of the R.A.F. was really for long range P.R. aircraft in quantity. The Mitchell, though a good aircraft, had not the range to cover all areas and gaps in P.R. cover were inevitable until more suitable aircraft were forthcoming.

General Reconnaissance

73. At the beginning of 1943, ten(1) squadrons were available for general reconnaissance in the enormous area of the Indian Ocean. The operational control of the coastal force was exercised by Air Headquarters, India through three separate subordinate formations. H.Q. No. 222 Group controlled the squadrons located in Ceylon, H.Q. No. 225 Group those in southern India and Karachi while the two squadrons in Bengal were controlled by A.H.Q. Bengal through No. 221 Group. The long range element of the G.R. force consisted of five Catalina squadrons. Three were based in Ceylon, one at Madras and one at Karachi. The other five G.R. squadrons were all equipped with medium range aircraft. Two Hudson squadrons were in Bengal and one in Ceylon; one Beaufort squadron operated from Ceylon and a Wellington squadron from Southern India. In February 1943, G.R. Liberators of No. 160 Squadron augmented the G.R. force, though initially only at one flight strength. But their appearance did not greatly assist the coastal effort since the Liberators were largely used for photographic reconnaissance work. Also in February 1943, No. 62 (Hudson) Squadron in Bengal converted to a medium bomber role and No. 353 (Hudson) Squadron changed locations with No. 36 (Wellington) Squadron, their locations then being Tanjore in Southern India and Dhubalia, Bengal respectively.

O.R.B. of G.R. Squadrons

74. But a glance at the order of battle does not give a true picture of the G.R. strength in India Command. Though fifty-four aircraft were available for coastal operations, varying numbers of flying boats up to a total of thirteen were on detachment to East Africa Command. Nevertheless, G.R. aircraft operating from bases in India and Ceylon flew 1,132 sorties, operations which involved some 9,824 flying hours. That the three Catalina squadrons in Ceylon mounted only ninety-six sorties between them during the period illustrates the effect the detachments had upon the flying boat effort. The two Catalina squadrons in India flew 290 sorties while the medium range squadrons carried out 726. In all these operations only one aircraft, a Hudson, was lost.

Despatch by ACM Peirse Jan.-June '43

75. Operations within the Nos. 222 and 225 Group areas consisted of the protection of shipping and of patrolling convoy routes and shipping lanes. Most shipping plied

(1) See Order of Battle at Appendix 2 Page 3.

between the Persian Gulf and Bombay but there were occasional convoys sailing between South Africa and Bombay and between Australia and Ceylon. In addition coastwise shipping off the east and west coasts of India required protection, and this was generally provided by the medium range squadrons. Coastal reconnaissance was a matter of dull routine and no aircraft made any enemy sightings during the period. Only one ship was sunk and while not conclusive, the routine suggests that G.R. patrols kept the enemy submarines away since their presence was reported on several occasions.

File AHQ(I) 83/35/Air Encl. 1A

76. One very important convoy was given air escort during an operation known as "Pamphlet". Eight Catalina flying boats were detached to the island bases of Addu Atoll and Diego Garcia while four other Catalinas and four Liberators were made available at Colombo. The convoy, which crossed the Indian Ocean included some large troop ships including the Queen Mary, Aquitania and Ille de France. Anti-submarine patrols began on 4 February 1943 and continued until the 13th but no glimpse of the enemy was obtained. The whole operation was carried out to the entire satisfaction of the Royal Navy.

77. The only piece of excitement occurred on 28 April when reports were received that an enemy convoy was steaming northwards through the Straits of Malacca towards an unknown destination. Six Catalinas were despatched to locate and shadow the force but no sightings were made. Two days later, on the 30th, a further report indicated the presence of enemy aircraft in the vicinity of Ceylon but again Catalina patrols proved negative.

IIJ50/47/8 Report by AOC. Bengal

78. In Bengal the two Hudson squadrons fulfilled a different role. They carried out regular reconnaissances over the Bay of Bengal north of a line 18° north and like other G.R. squadrons of India Command they did not sight any large enemy ships. Special patrols were flown down the Arakan coast as far as Diamond Island but here again no enemy shipping of any size was encountered. In the absence of sea-going shipping, aircraft on these patrols frequently machine-gunned and bombed small craft and shore objectives along the coast. Some sampans and other small craft were damaged by machine-gun fire during these sorties but owing to the small and dispersed nature of the targets presented, operations by bomb carrying Hudsons yielded disappointing results. On 1 January a Hudson of No. 353 Squadron failed to return from a reconnaissance of the Arakan coast.

IIJ50/47/8 Report by 221 Group

79. It was found that to enable an adequate distance to be covered in the Arakan coast patrols, it was necessary to operate from bases more advanced than Dum Dum where Nos. 62 and 353 Squadrons were located. At first Fenny and Agartala were used as advanced bases but when the airstrip at Dhubalia became available, No. 62 Squadron and a detachment of No. 353 Squadron moved there on 28 and 29 January. The shorter Arakan coast patrols henceforth operated from and ended at Dhubalia. The base was also used for aircraft engaged on shipping patrols westwards over the Bay of Bengal, the aircraft landing at Cuttack on the conclusion of their sorties. On 22 February, 1943, the remaining aircraft of No. 353 Squadron were transferred to Dhubalia and on the following day No. 62 Squadron moved from Dhubalia to Jessore preparatory to converting to a medium bomber role. Reconnaissance and shipping escort patrols during February were flown largely by Hudsons of No. 353 Squadron but towards the end of the month No. 62 Squadron took over the tasks when Dhubalia was rendered temporarily unserviceable by some

unseasonal rain. The Arakan coast patrol continued daily and reconnaissance of the Bay of Bengal periodically. These operations were continued by No. 353 Squadron until 25 March when the Squadron moved to Tanjore in Southern India and No. 36 Squadron moved from Tanjore to Dhubalia. The Wellingtons of No. 36 Squadron continued the Arakan coast patrols and in addition flew a number of sorties escorting Allied shipping sailing in and out of Chittagong.

80. All coastal sorties from Bengal during April and May were flown by Wellingtons of No. 36 Squadron, the operations as usual conforming to the general pattern of patrols along the Arakan coast and over the Bay of Bengal. On 28 May, 1943, No. 36 Squadron ceased operations in anticipation of a move to the Middle East Command. The Arakan coast patrols were therefore taken over by Wellingtons of No. 215 (Bomber) Squadron. General reconnaissance aircraft operating from Bengal flew 266 sorties during the period January to June 1943 for the loss of one aircraft.

Passim

81. Materially the coastal force of India Command achieved little but this was due to the lack of co-operation from the enemy rather than from any lack of effort on the part of the air forces. G.R. operations, uninteresting as they may appear, played an essential part in the defence of India and the protection of Allied shipping. India, a backward country industrially, could not provide the materials of war needed by the armed forces and it was on the sea routes, protected by the Royal Navy and G.R. aircraft, that the sustenance of Allied forces depended. The part played by the coastal squadrons cannot be judged by tangible results achieved, but rather by the importance of their work in the light of strategical considerations.

SECTION XI

OPERATIONS DURING THE MONSOON 1 JULY - 15 NOVEMBER, 1943

Introduction

1. In the previous four chapters of this narrative the operations in India Command from January to June, 1943 were recorded. A description was given of the plan to capture Akyab and establish forces on the line of the Chindwin river between Kalewa and Sittaung with the Eastern Army under General Irwin. It was shown how the Eastern Army failed in its objects owing to the lack of resources, the inexperience of the troops engaged and the fact that the Japanese were able to bring up substantial reinforcements. As Field Marshal Wavell said, the greatest gain from the campaign was experience and the loss, in prestige and morale. Thus during the monsoon of 1943 it became an urgent task to rectify defects in training and equipment, and to restore the morale of the army which had suffered a severe shock, so much so that commanders and men were apt to place the need to protect themselves against the Japanese before the need to seek him out and destroy him. There had been neither the time nor opportunity to give troops that specialised training in jungle fighting at which the Japanese were so adept, having trained their troops to this end before the war. The disastrous campaigns in Malaya and Burma had invested the Japanese army with a reputation for invincibility, far removed from reality, and this had to be destroyed before the offensive spirit could be re-established throughout the forces in India.

A.M. file C.30061 Gen. Sir Claude Auchinleck

2. Internally India remained quiet after the disturbances of August, 1942. The Congress Party, which had been responsible for the outbreak, had been effectively subdued by the timely internment of its leaders. Civil unrest therefore subsided. There were, however, other matters giving rise to anxiety. Various factors, including the unfavourable course of the war against Japan, had shaken public confidence and caused a sharp rise in the price of food, cloth and other basic commodities towards the end of 1942, and an economic crisis arose. This persisted throughout the monsoon of 1943, hampering the war effort, embarrassing internal administration and causing famine conditions in Bengal and parts of southern India. Nevertheless, in spite of the almost unrelieved story of failure in the India theatre, the turn of Allied fortunes in Europe and Africa at the end of 1942 and the entirely changed aspect of the war against Germany during the first half of 1943, had a tonic effect upon India. No less heartening had been the Allied recovery in the south-west Pacific, where the Japanese were being driven back, had lost heavily in aircraft and shipping and were clearly finding it difficult to maintain and protect the widely dispersed commitments which they had undertaken. These events did not fail to have their effect upon the forces in India, their morale rose perceptibly and there was a growing desire to get at grips with the enemy.

Ibid

3. Many difficulties, however, hindered the development of resources and communications in India, particularly in the north-east. Delays in the provision of stores and materials, shortage of skilled labour, limited transport capacity, natural obstacles to constructional work due to terrain and climate, disease too, all handicapped progress. During the winter and spring of 1942-1943 a succession of major projects had in fact accumulated and these competed for the limited engineer and transport resources available. Though some

progress was made schedules were seldom realised and at the onset of the monsoon in June, 1943, much still remained to be done of what had been planned in the previous year. Such was the situation in June, 1943.

4. On 21 June, 1943 General Sir Claude Auchinleck became Commander-in-Chief, India in place of Field Marshal Sir Archibald Wavell. Almost simultaneously the intention to set-up a new South East Asia Command was announced. This Command was to relieve India Command of the responsibility for the conduct of operations against the Japanese in the theatre. In August, 1943, Admiral Lord Louis Mountbatten was designated Supreme Allied Commander. Although this would relieve the Commander-in-Chief, India in due course of the planning and execution of future operations against the Japanese, there was much to be done during the intervening months, if continuity of effort was to be preserved until the new Command started to function in November, 1943. During the monsoon of 1943, therefore, India Command performed much work in framing and examining plans which conformed with the Washington and Quebec conferences. Meanwhile, intensive training and preparation for future sea, land and air operations continued in India. But details of this planning are best left to the volume of this narrative which records the operations subsequently mounted.

5. On the eastern frontier of India and along the lines of communication leading to it, development proceeded as far as monsoon conditions would allow. Before continuing it might be as well to describe the over-riding effect of the meagre resources of India and of the severely limited capacity of the lines of communication on military operations. Although these conditions may apply to any theatre of war they exerted a particularly serious influence in India for several reasons. Firstly, the original conception of the load to be placed on the lines of communication, though based on sound reasoning at the time, had proved to be too small. Secondly, in addition to securing the purely military needs of the land and air forces engaged with the enemy, including the large demands of the air transport route to China, the lines of communication had to cope with heavy civilian requirements, such as those of the tea and jute industries. Thirdly, the normal economic life of Assam and eastern Bengal had to be sustained and this entailed the transportation of large quantities of commodities over the railways, rivers and roads which constituted the lines of communication serving the China, Burma and India theatre of war. Thus in reading the account of the operations which follows, the above facts should be borne in mind as their influence affected all plans and operations against the Japanese, whether on land or in the air.

File AHQ(I) 208/Int. Encl. 9A

6. The lack of activity on the part of the land forces, consequent upon the commencement of the south-west monsoon over Bengal and Burma, was reflected in the reduction of air operations, the need for which correspondingly diminished. Nevertheless, R.A.F. activity was relatively more marked than that of the enemy whose offensive air policy was virtually negative. R.A.F. policy for the monsoon period was laid down in April, 1943, priority in offensive operations being given to attacks on enemy airfields. By the middle of May, however, it had become apparent that the Japanese intended to withdraw the bulk of their air forces from forward airfields. At the same time it was felt that if damage could be done to the main enemy communications in Burma, the Japanese would have great difficulty in repairing damage effectively during the monsoon. Thus while the maintenance

of air superiority remained the primary task of the air forces, the majority of offensive effort was directed to the interdiction of enemy lines of communication.

File AHQ(I) 160/1/1/Air Encl. 6A

7. Apart from the uncertainty of the weather Allied air operations during the wet season were limited by the number of all-weather airfields available. Some squadrons had therefore to be withdrawn from forward airfields in Bengal and the monsoon period used to rest, re-equip and train squadrons for the coming battles in the dry season. Moreover, the enforced operational lull was used to build up stocks of supplies in the forward areas and to overhaul the system of operational control, communications, administration, supply and maintenance to ensure that squadrons could move forward as soon as fair-weather strips dried out. This was no easy task as administrative disorganisation ensued from the flooding and breaking of rail and road communications, dislocation of signals channels and the flooding of airfields, runways and domestic accommodation. It is difficult briefly to explain the many problems facing the administrative staffs, but when it is realised that the area of Bengal Command was approximately two and a half times the size of the British Isles, that telephonic communications were virtually non-existent except on one or two trunk channels, that the monsoon rain brought work almost to a standstill and that the main rail and road communications were cut during the whole monsoon period by floods in July, it may safely be assumed that their task was a difficult one.

ILJ51/28 Report by AOC. Bengal

8. All efforts of Bengal Command, after providing for the operation of the available air forces, were directed to planning and preparing for post-monsoon operations. Only broadest ideas on subsequent operations could be given and these covered possible operations over the whole front of 700 miles with probable alternative plans for different parts of the front. In consequence, provision had to be made for the rapid development of new airfields on both IV and XV Corps fronts in Manipur and Arakan respectively, stocks of bombs, petrol, oil and lubricants had to be assembled and new communications installed. With many other problems to be faced as normal routine, the limited organisation and planning staffs were severely taxed. 1 December was given as the date for the commencement of full scale operations. Thus the R.A.F. did well to continue monsoon operations concurrently with planning and preparation for later campaigns. But as already mentioned these details should be left to a later volume and the scope of this narrative confined to the actual air operations undertaken during the monsoon. These it should be mentioned had no small bearing on subsequent events since the constant harassing attacks by U.S.A.A.F. and R.A.F. aircraft presented the enemy with great supply problems.

AHQ(I) File 160/1/1/Air

9. Great difficulty had been experienced in obtaining reserve Blenheim aircraft and spares and this, coupled with the healthy reinforcement flow of Hurricanes, led to a decision to re-equip the five Blenheim squadrons during the summer of 1943. It was originally planned to equip the squadrons with Hurricane fighter-bomber aircraft, thereby creating a better and more flexible weapon for army support. This policy was later amended and only one squadron was so equipped, the remainder receiving Hurricane IIc fighters. But owing to a series of unfortunate circumstances the training programme did not go according to plan. Road and rail communications were unable to deal adequately with the moves of squadrons and units were not back in the operational area by the anticipated dates. This problem was foreseen by Air Headquarters, Bengal but their advice was not heeded.

The A.O.C. Bengal thought that the squadrons should remain in Bengal where suitable stations existed for re-equipping squadrons and personnel could have been given a change of climate within the Bengal area itself. In all five(1) Blenheim squadrons left Bengal Command for conversion under No. 225 Group in southern India. In addition, No. 135 (Hurricane) Squadron also moved south to act as a training unit. It is doubtful whether the change to No. 225 Group benefitted personnel as the majority of training was carried out in the Madras area where the climate is notoriously bad. Monsoon and typhoon conditions had a retarding effect on training and this, coupled with transportation difficulties, meant that the first squadron to return to Bengal was not adequately trained and required a further month's intensive training on reaching the operational area.

A.M. File CS. 28027/47 ACM. Peirse

10. The chain of operational control in India remained unchanged throughout the period under review. Coastal operations were in the hands of Nos. 222 and 225 Groups and the direction of operations on the Burma frontier continued to be the responsibility of Air Vice-Marshal T.M. Williams. On 1 July, 1943 there were fifty-two squadrons in the India Command of which thirty-five were operational and deployed. Twenty of these squadrons were in north-east India, nine in Ceylon and six in other parts of India. The Americans had eleven squadrons operational in Bengal and Assam. Of the 509 aircraft on strength of R.A.F., R.I.A.F., R.C.A.F. and Dutch squadrons, 240 were serviceable and ready for operations; the U.S.A.A.F. possessed 185 aircraft of which 149 were ready for combat. Until the weather improved in October, this order of battle remained substantially unchanged.

IIJ51/28 and A.M. File CS. 28027/45

11. The policy adopted for the employment of the limited air forces available was laid down as follows:-

(a) Maintenance of local air superiority

(b) Reconnaissance

(c) Direct support of the army

(d) Air transportation and supply dropping

(e) Destruction of Japanese lines of communication, bases, dumps etc., in conjunction with the U.S.A.A.F.

In the execution of these tasks the R.A.F. aided by one Canadian and one Netherland squadron, flew some 8,236 sorties between July and 15 November and lost forty-two aircraft, mainly owing to bad weather, in doing so. The Americans lost twenty-seven aircraft in mounting 5,547 sorties.

File AHQ(I)

File AHQ(I) 160/1/Air Vol. II

12. Before describing the air operations which took place it is appropriate to explain the actual effects the monsoon had upon operational flying. Apart from the period of the monsoon, which is at its height over Burma and the Bay of Bengal in June, July and August, conditions for flying over Burma are excellent. Visibility is consistently good, skies are clear, land features easily distinguished and wind velocity slight. The coming of the south-west monsoon changes all this and brings all the flying hazards contingent upon massed cloud formations with great atmospheric turbulence, though this turbulence is less prevalent after the rains commence. During the full monsoon period almost the world's

(1) Nos. 11, 34, 42, 60 and 113 Squadrons.

worst weather conditions prevail and cumulo-nimbus cloud, the greatest enemy of aircraft in south-east Asia, builds up frequently from low level to above aircraft ceiling. During the summer of 1943 the monsoon varied considerably. At the beginning of July conditions were relatively good when for a few days the monsoon was less active. During the remainder of that month there were three major depressions over the Bay of Bengal and during August two. For the remainder of the the period normal monsoon conditions prevailed and for a period of eight days in the middle of August, reasonably fine weather was experienced. Absolute curtailment of operations occurred only during the worst of the weather associated with the depressions.

A.M. File CS. 28027/45 ACM. Peirse

13. Useful meteorological facilities were not widely available and the problem of providing adequate weather information for aircrews was a formidable one. Nevertheless, a considerable improvement was effected and with fairly reliable route forecasts of weather over enemy territory it was generally possible to locate communications targets in the small dry zone of central Burma around Meiktila and Mandalay. Though the scale of operations naturally decreased, the good results achieved during the monsoon of 1943 indicated that, providing sufficient radio and visual aids to navigation were available, large scale operations could be undertaken even at the height of the monsoon. The rains inevitably placed a great strain on maintenance crews and yet there was no sharp decline in serviceability. But it would be unwise to deduce that the monsoon had no effect upon serviceability since so many other factors were involved. Fighter serviceability never sank below 67 per cent of the average strength and, save for one bad month (September), bomber serviceability averaged well over 60 per cent. A greater affect upon maintenance was the rupture of communications owing to bad weather. For instance, the number of damaged aircraft under repair at maintenance units increased correspondingly to the greater length of time taken to transport them from unit to base.

The Maintenance of Air Superiority

Various O.R.Bs.

14. In July, 1943 a Beaufighter and three Hurricane squadrons remained at readiness for the air defence of Calcutta. On the American sector of the front two P-40E (Kittyhawk) squadrons of the U.S.A.A.F. protected the vital air transport bases in north-east Assam, the oilfields at Digboi and the construction of the Ledo Road. At Imphal, on the IV Corps front, a solitary Mohawk squadron, primarily engaged on offensive reconnaissance, was responsible for the air defence of the Manipur base. Farther south in Arakan, five Hurricane squadrons were available for the fighter defence of the area, though in effect their role was principally offensive. Madras, which had been without fighter cover throughout the dry-season, had the attendance of a Hurricane squadron, though ostensibly it was in southern India to assist in the conversion of Blenheim squadrons. There were three Hurricane squadrons in Ceylon and once again they had no operational work to perform.

IIJ51/28 Report by AOC. Bengal

15. During the height of the monsoon in July, August and to a lesser extent, September, the enemy practically ceased operations apart from some defensive fighter sorties(1) over their own bases and occasional reconnaissances over Allied territory. But with the improvement in weather conditions towards the end of September the Japanese commenced air operations on a limited and sporadic scale. With the passing of the monsoon some anxiety was felt about the night fighter

(1) See Appendix 13, para. 28.

defences of Ceylon where units of the Eastern Fleet were assembling, and of Calcutta and Chittagong where considerable shipping activity was taking place. These factors enhanced the attractiveness of these targets from the Japanese point of view. Moreover these areas were particularly vulnerable to sporadic attack owing to the demoralising effect raids and upon the native population, particularly at Calcutta. For the night defence of these areas there existed No. 176 Squadron at Calcutta equipped with one Flight of Beaufighters and a number of A.I. Hurricanes, all the later being non-operational through lack of essential equipment. In early September, 1943, two Beaufighters were sent to Ceylon, thus thinning perceptibly the night fighter resources of north-east India. An urgent appeal was therefore made to the Middle East Command for additional aircraft for No. 176 Squadron and for the despatch of an advanced echelon of No. 89 (A.I. Beaufighter) Squadron to Ceylon in the first week of October to cover the concentration of the Fleet during the moon period of October. No. 89 Squadron arrived in Ceylon towards the end of October and on their arrival the two Beaufighters of No. 176 Squadron moved to Madras.

File AOCINC No. 6 Pt.X AOC-in-C Ind. to AOC-in-C Middle East 18.9.43 Encl. 52A

16. The first attempts to intercept enemy reconnaissance aircraft were unsuccessful. A Japanese four-engined flying boat appeared over Ceylon on 20 September and though two Hurricanes of No. 273 Squadron were scrambled no contact was made. In north-east India enemy reconnaissance aircraft escaped unscathed until 4 October when Hurricanes, surprisingly perhaps, intercepted a "Dinah" over Calcutta and claimed it as probably destroyed. In bright moonlight on 11/12 October the Japanese sent over another four-engined flying boat to reconnoitre Ceylon. A Beaufighter of No. 176 Squadron detachment was scrambled from Vavuniya and controlled by G.C.I. intercepted the flying boat at 6,500 feet. Closing in for the kill the pilot pressed home his attack and saw the enemy aircraft catch fire and crash into the sea off Trincomalee.

IIM/A42/1A AHQ(B) DIS. No. 386 and App. "D" to 222 Group F. O.R.B. Oct. 1943

17. Enemy bombing attacks began again on 20 October and from then until the middle of November, offensive raids were carried out against widely dispersed targets including Chittagong, Agartala, Fenny, Palel, Imphal, Kumbhigram and Tiddim. The result of interceptions were generally disappointing because of the advantages the enemy possessed over the Hurricane that formed the bulk of the defensive force. When contact was made, however, attacks were carried out with vigour and losses as high as could be expected inflicted on the enemy.

Passim

18. The first bombing attack on 20 October was made by nineteen bombers and fourteen fighters and directed against Chittagong docks. The raid was not very successful from the Japanese point of view since military damage was slight and casualties few. Hurricanes of No. 224 Group intercepted the enemy formation before reaching the target area and in claiming four enemy aircraft destroyed the R.A.F. lost three Hurricanes. The Japanese air force then made three attacks on our lines of communication in Arakan, two of them on Tambru Ghat on 23 and 28 October and against Cox's Bazaar on the 25th. Damage and casualties were not heavy but civilian morale at Tambru Ghat was a little shaken after the second riad and some labour had to be replaced by military personnel. The three raids took place just inside our territory and thus no interception was effected. A brief lull in enemy air raids followed the Arakan attacks but there was a considerable increase in reconnaissance activity, including sorties by enemy flying boats over Ceylon and Madras.

AHQ(I) File 47/Int. E.4A

O.R.Bs. 222 and 225 Groups Nov. 1943

19. At night on 11/12 November a Beaufighter, of the recently installed detachment of No. 176 Squadron, intercepted an enemy flying boat off Madras and shot it down into the sea. The following night two Japanese flying boats reconnoitred Colombo and Trincomalee. Four Beaufighters of No. 89 Squadron were scrambled, one of which intercepted an enemy flying boat in the Colombo area and destroyed it. Several useful intelligence exhibits in the form of aircraft parts and three bodies were recovered by prompt action by Naval and R.A.F. launches. The second flying boat, operating over Trincomalee, escaped although A.I. contact was made on two occasions.

IIM/A42/1A-C AHQ(B) DIS. No. 6

20. In the meanwhile significant events were taking place in Bengal. That excellent Japanese reconnaissance aircraft, the "Dinah", had flown at will over north-east India and by superior speed and high operational ceiling had foiled the attempts of Hurricanes to intercept. During October, 1943, however, three Hurricane squadrons began equipping with Spitfire Vc aircraft. The first squadron to be so equipped, No. 615, moved forward to Chittagong in early November and within a week shot down all three Dinahs which ventured over our lines. But as the Spitfires were not equipped with long range tanks their operations were confined to a small radius of their base at Chittagong and up to the middle of November they had no opportunity of meeting large enemy formations. Until more Spitfire squadrons became operational, Hurricanes had perforce to bear the brunt of fighter defence.

IIM/A42/1A-C AHQ. Bengal D.I.S. 10 & AHQ(I) File 47/Int.

21. The next series of Japanese bombing raids took place in areas where no Spitfires were located. On 9 November, two airfields on the Manipur front were raided during which some damage was done and casualties sustained. The enemy formation making the attack split in two on approaching the Imphal valley; sixteen twin-engined "Lily" bombers and six fighters attacked Imphal airfield where two unserviceable Hurricanes were destroyed on the ground and another damaged. Ten Mohawks scrambled to intercept and they succeeded in shooting down one enemy fighter without loss. The other portion of the attacking force, comprising twelve Lily bombers and six fighters, attacked Palel airfield. Eight Hurricanes were airborne but no interception took place. On the morning of 11 November the last raid of the series was made by eighteen Lillies and six Oscars against Kumbhigram airfield. Six R.A.F. aircraft were damaged on the ground, four of them badly and casualties amounted to twenty-seven killed and nineteen injured. No interception was made although eighteen Hurricanes and eight Mohawks were airborne. All three airfields remained serviceable and our own air operations were not seriously affected by the raids. The fighter defence of the area consisted of one squadron of Hurricanes at Palel and a squadron of Mohawks at Imphal, both of which were scrambled for each raid. The fact that only one interception was made can be attributed to a combination of factors. Firstly, the Mohawks operated on H.F. and the Hurricanes on V.H.F., and this naturally complicated the task of the operations controller. No G.C.I. station was in operation at the time and no fixer system available, consequently the identification of hostile or friendly plots and the correct estimate of height was most difficult. Finally, the pilots themselves had had very little experience in air fighting and fighter control, the Mohawks being hitherto used principally for low-level offensive work and the Hurricanes consisting almost entirely of ex-Blenheim pilots and pilots direct from an operational training unit. Had all pilots effected an interception it seems probable that, owing to lack of training, they would have been badly mauled by the Japanese fighters.

The experience gained from these raids, however, led to improvements in the defence arrangements of the Imphal and Kumbhigram areas. But the need for Spitfires was sore indeed.

22. November, 1943 did not mark the end of a phase in air fighting. On the contrary, it marked the beginning of a series of intensive air battles which took place during the winter of 1943-1944. The operations described above took place in a period when the air defence of north-east India was far from satisfactory and before the Spitfire appeared in numbers over the Burma front. The discouraging results of encounters with the Japanese at the beginning of the campaigning season illustrated the vital need for Spitfires. In these first post-monsoon enemy raids on north-east India the Japanese followed their usual practice of bringing up formations of aircraft for a series of raids. The early warning system though the best possible under the conditions found on the Burma front, failed to give the Hurricane and Mohawk squadrons sufficient time to reach the altitude required for tactical advantage, with the result that the R.A.F. failed to break up or to inflict appreciable casualties on the enemy. The Spitfires of No. 615 Squadron, however, admirably intercepted enemy reconnaissance aircraft on three occasions at over 25,000 feet and clearly achieved full tactical surprise as well as confirming the superiority of the Spitfire over the best Japanese types. The effect of these successes upon the air forces was electric and it was confidently assumed that when two further squadrons of Spitfires became operational at the end of November, they would make a decisive contribution to the battle for air supremacy. But it was feared that reaction would set in among the Hurricane squadrons, which still had to form the greater part of the fighter defence, when they had definite proof of the inferiority of their aircraft. Unless therefore sufficient Spitfires were made available to provide top cover there was little hope of Hurricanes being able to deal even with Japanese bombers. Thus it seemed likely that the success of land/air operations scheduled for the winter of 1943-44, which rested largely upon the ability of the Allies to maintain a favourable air situation, might be prejudiced. Moreover, the new Japanese Army type 02 (Tojo) fighter, far superior to the Oscar, was already operating in China and had been rated by the Americans as having a performance equivalent to a Spitfire VIII. And so the provision of more Spitfires became a matter of vital importance to India. In appealing to C.A.S. for an increased Spitfire flow, Air Chief Marshal Sir Richard Peirse said "If I can operate an adequate force of Spitfires this campaigning season I am convinced we can make an impression on Japanese air effort as seriously to affect the whole strategy in this theatre". Events proved this to be correct for the advent of the Spitfire in the India theatre sealed Allied air supremacy.

A.M. File CS. 18154 AOC-in-C to C.A.S. 14.11.43

Tactical Operations

23. In June, 1943 Allied forces were in contact with the Japanese on three fronts, in North Burma, in Manipur and in Arakan. The northern sector of the front was held by the American trained Chinese troops engaged in clearing the trace of the Ledo Road. Advanced elements of the Chinese forces were well beyond the roadhead and had to be supplied by air. During the monsoon progress on the Ledo Road was slow. Nearly all engineer effort was absorbed in repairing washouts and adding extra surfacing to the road already built. By 15 November the road had been surveyed up to ninety-nine miles from Ledo, bulldozers were working on the seventy-ninth mile and forty-eight miles of metalling had been completed. As soon as more rapid progress at the roadhead became possible

A.M. File C. 30061 General Sir C. Auchinleck

Chinese troops pushed southwards towards the upper reaches of the Chindwin. Some minor clashes occurred with weak Japanese detachments in the Hukawng valley but up to 15 November no serious opposition had been encountered. By then the Chinese had reached an area south and south-east of Shingbwiyang. Since the progress of the Chinese was not greatly hampered by the enemy, tactical operations by the Tenth U.S.A.A.F. were few and the American squadrons in Assam directed their effort mainly to communications targets well beyond the battle line. On the left flank of the Chinese forces a small number of British troops based on Fort Hertz held the country up to the Salween river. The garrison was maintained by air supply. No tactical formations were allotted especially to support the Fort Hertz garrison.

Operations on the IV Corps Front

24. The responsibility of the front east and south of Manipur had since 1942 been in the hands of IV Corps under Lieutenant-General G.A.P. Scoones. Its Headquarters were at Imphal and its front, which extended from the Chindwin east of the Kabaw(1) valley to the Chin hills south of Tiddim, was held by two British-Indian divisions. H.Q. IV Corps was in fact responsible for the whole front up to the Chinese Yunnan frontier, excluding that portion held by the Chinese-American task force, since the Fort Hertz garrison came under IV Corps control. During the dry season of 1942-43, one division with H.Q. at Tamu had patrolled across the Chindwin; the other had moved fifty miles down the Tiddim road and during the summer had a brigade forward at Tiddim itself. Until November nothing of importance was attempted by either side on this front other than patrol activity.

O.R.B. 170 Wing

25. No. 170 Wing at Imphal, which supported IV Corps on the central sector of the front, had available in July, 1943, No. 42 (Bisley) Squadron, No. 155 (Mohawk) Squadron and a flight of tactical reconnaissance Hurricanes of No. 28 Squadron. Since no major ground activity took place during the monsoon the main centre of interest from both army and air points of view lay in the Kalemyo-Kalewa area which comprised the enemy's most forward positions and line of communication. Another area which showed possibilities was the road from Pakokku to Gangaw, the scene of unusual M.T. and troop movement in early July and which necessitated careful reconnaissance to assess its significance. The effort that could be mounted by the Bisleys and Mohawks was therefore directed against targets in the Kale and Kabaw valleys. But operations were seriously hampered by the weather and other factors. The strip at Imphal broke up and it became impossible for the Hurricanes and Mohawks to operate from it. They were therefore transferred to Agartala in July whence they could still support IV Corps but were badly handicapped as the battle area was near the limit of their range. Moreover, No. 42 Squadron, after making eight raids comprising forty-eight sorties between 1 and 23 July, became virtually non-operational owing to the sodden condition of their airfield at Kumbhigram.

Ibid

26. Two very successful attacks were made by No. 42 Squadron on 8 and 11 July. In the first raid six Bisleys bombed the Japanese Headquarters at Kalewa; the second attack was by eleven Bisleys on the supply dumps at Mawlaik. On both occasions bursts were well concentrated in the target

(1) The word "Kabaw" means "death", an apt name for the valley in view of its unhealthy climate.

area and considerable damage inflicted. Theizang and Japanese stockades on the Kalemyo-Fort White road were also successfully attacked and seven direct hits were obtained on a reputed stores and ammunition dump in the area. Mohawks co-operated by strafing attacks on machine-gun posts, motor and bullock transport and by attacks with 20 lb. and 40 lb. bombs on dispersed troops and picket posts. The necessary photographic information for IV Corps was supplied by daily sorties by No. 28 Squadron operating from Agartala whenever weather permitted. The information produced gave a valuable picture of Japanese dispositions and it was only the bad weather that prevented subsequent attacks on worthwhile targets by light bombers.

27. After a strike by five Bisleys on 4 August against Mawlaik and a raid by a single bomber on Kalemyo, the weather kept Kumbhigram more or less permanently unserviceable and No. 42 Squadron did not mount another raid before being withdrawn to southern India in September. They stood by every day to attack Kaing, which IV Corps were anxious to have bombed as being an important enemy H.Q. and supply centre, but bad weather foiled their co-operative intentions. No. 28 and 155 Squadrons continued their work in tactical and offensive reconnaissance, chiefly in the Kabaw valley and along the Kalemyo-Fort White track. Theizang, which had been identified as an advanced base and stores dump, received constant attention and a number of machine-gun posts in the area were effectively silenced. The principal interest on the IV Corps front in August was operation Smasher, carried out by 63 Brigade operating from Tiddim. Its object was to raid enemy positions around Theizang to obtain identifications and prisoners. It was planned that No. 42 Squadron should bomb the Japanese H.Q. at Kalemyo on 7 August and carry out an offensive reconnaissance of lines of communication in the area. Immediately on return to base they were to standby for army support calls. But No. 42 Squadron was grounded by the wet condition of Kumbhigram airfield and air support for Smasher was confined to fighter-bomber attacks by No. 155 Squadron. The support given by the R.A.F. was regarded as satisfactory. No. 155 Squadron carried out an effective strike with six Mohawks on 7 August and the morale of ground troops was duly raised by the presence of friendly aircraft. The main interest in the operation, however, was the attempt at R/T control of fighter aircraft by an R.A.F. officer stationed with forward troops. It was proved that existing arrangements for R/T control were inadequate and that methods such as smoke mortar bombs or smoke shells were essential for indicating targets close to our own troops.

IIM/C170/1
O.R.B.
170 Wing
Aug.-Sept.
1943

28. During the remainder of August and all of September there was little operational activity in the air or on the ground although Mohawks were out on offensive reconnaissance whenever possible. Operations were greatly curtailed during the first two weeks of September, firstly by the move of Nos. 28 and 155 Squadrons back to Imphal from Agartala, and then by unserviceability of the Imphal strip. When normal operations became possible during the latter half of September a great deal of aircraft unserviceability was experienced in No. 28 Squadron to the detriment of tactical reconnaissance tasks. Finally, there was a period of exceptionally bad weather towards the end of September which limited operational flying.

29. July, August and September, 1943 were not, therefore, very notable months for air operations on the IV Corps front. No. 42 (Bisley) Squadron could mount only eleven raids comprising fifty-four sorties during the period and all these sorties were flown between 1 July and 4 August. The

bomb tonnage dropped in these attacks was thirty-one. The Mohawks of No. 155 Squadron were more consistent and they flew 149 offensive sorties spread fairly evenly over the three months. Hurricanes of No. 28 Squadron detachment flew fifty-nine tactical reconnaissances in July and August but could mount only eight sorties in September.

30. October, 1943 heralded not only the arrival of better weather but the air reinforcement of the IV Corps front. No. 45 (Vengeance) Squadron became operational at Kumbhigram on 14 October and No. 110 (Vengeance) Squadron joined them four days later. Hurricanes and Mohawks of Nos. 28 and 155 Squadrons remained in the area and were reinforced during October by Hurricanes on loan from No. 224 Group. On 1 November No. 34 (Hurricane) Squadron became operational at Palel. On the same day No. 168 Wing took over control of the two Vengeance squadrons at Kumbhigram leaving No. 170 Wing in charge of two fighter squadrons and a flight of tactical reconnaissance Hurricanes in the Imphal valley.

File 3 TAF/ 17/2/Air Encl. 75A

31. The improved weather brought increased patrol activity, particularly in the Kale valley, and air operations were accordingly stepped up to meet army demands. Vengeances began dive-bomber attacks on 16 October in support of the army but it proved impossible to guarantee the recognition of obscure targets in mountainous jungle country from 12,000 feet, the height at which the Vengeances commenced their dive, and so Mohawks were tried as pathfinders. This worked fairly well at first and until an unfortunate incident occurred on 25 October. Eight Vengeances were detailed to bomb Japanese positions on a ridge close to our own troops and Mohawks acted as pathfinders. The Vengeances were unfortunately confused by the smoke of battle and bombed our own troops who were being shelled by Japanese mortar fire. Thereafter the major operational efforts of the Vengeances was directed to the better defined targets on lines of communication, dumps and troop concentrations to the immediate rear of the battle line. This enabled full advantage to be taken of the dive-bombers accurate aim. Close support of IV Corps therefore became the exclusive province of Hurricanes and Mohawks.

32. Japanese infantry became active south of Tiddim from 10 to 20 October and columns of about 300 strong made limited advances in the Fort White, Webula and Haka areas. After a period of consolidation with supplies arriving via the Kalemyo-Fort White road, further attacks were launched by the enemy culminating in our withdrawal from Falam, Haka and Fort White between 7 and 14 November. R.A.F. effort during October and November was accordingly concentrated into this sector of the front and its supply routes and some sixteen sorties were flown daily in support of IV Corps.

33. From 1 October until 15 November Vengeances flew 287 sorties and dropped 127 tons of bombs and in the course of 167 fighter-bomber sorties Mohawks dropped eighteen tons. During the whole period, 1 July to 15 November, the R.A.F. flew 912 sorties on the IV Corps front comprising 341 light bomber, 393 offensive fighter and 178 tactical reconnaissance sorties. In all 157 tons of bombs were aimed at the enemy, principally in the Kale and Kabaw valleys.

Operations in Arakan

A.M. File C. 30061 General Auchinleck

34. In Arakan after the retreat of our forces from Buthidaung and Maungdaw in the spring, the 26th Division took up positions covering Cox's Bazaar. The enemy's forces were just forward of the Maungdaw-Buthidaung road and both sides settled down

into these positions for the monsoon period. Generally speaking, other than patrol activity, nothing of importance occurred on land in Arakan during the period. Patrols, however, were used not only to get information and keep in touch with the enemy, but also to build up the morale of troops. This, it must be admitted, had been somewhat shaken by the experiences of the first Arakan campaign and it was hoped that by constant and energetic patrolling to accustom troops to work in jungle country and gradually to acquire a moral ascendancy over the enemy. To this end the troops worked well under difficult conditions and much success was achieved. Despite the depressing monsoon conditions there was a general rise in morale. The 26th Division held the forward area in Arakan throughout the monsoon and until October when the 7th Division relieved it. The 5th Division also moved into the area and on 1 November the two divisions were placed under H.Q. XV Corps commanded by Lieutenant-General W.J. Slim.

O.R.B. 224 Group July-Nov. 1943

35. A glance at the order of battle for the coastal sector of the front will probably give the impression that a comparatively large air force was available for the support of one division, particularly since IV Corps in Manipur was supported by only two and a half squadrons. It should be remembered, however, that in Arakan army support constituted only one function of the R.A.F. Airfields in Arakan were more suitably placed not only for operations along the coast but also in central Burma. Hence the major part of the air forces on the Burma front were allocated to Arakan. Headquarters No. 224 Group at Chittagong controlled five Hurricane and two Blenheim squadrons, a flight of Hurricanes for tactical reconnaissance and a detachment of Vengeances. In addition a Beaufighter squadron was available for long range intruder work.

ILJ51/28 Part II Report by 224 Group Jun.-Nov. 1943

36. The two main offensive tasks of the No. 224 Group squadrons were (a) direct tactical support of the 26th Division by attacks on Japanese troops and by tactical reconnaissance (b) harassing the enemy's lines of communication by attacking rivercraft, railways and M/T in the Mayu peninsula area, central Burma and along the Arakan coast from Akyab to Sandoway. Monsoon weather dominated the period with spells of very bad weather alternating with fair periods roughly every ten days. The Arakan coast was covered with 10/10 low cloud for days on end, particularly south of Cox's Bazaar, making conditions impossible for bombing and not much better for ground strafing. Under such conditions clouds normally pile up to 25,000 feet and more over the hills. It sometimes happened that weather conditions were more favourable over central Burma than Arakan and every opportunity was taken to utilise this especially with the Beaufighter squadron. During the period six days were completely useless for flying, on nine other days operations attempted were abortive and on twenty-two days weather considerably reduced operational effort.

Ibid

37. The support of the 26th Division consisted of fighter attacks on enemy troop positions and bomber attacks by Blenheims and Vengeances on Japanese Headquarters, troop quarters and supply dumps. Throughout the period the bomb line was stabilised on the line Maungdaw-Buthidaung-Paletwa. R.A.F. attacks made the enemy progressively more cautious in siting his monsoon quarters, using villages less and less in favour of well concealed camps of small basha huts tucked away in densely wooded valleys. Full use was made of information obtained by tactical reconnaissance and from clandestine sources and it was possible on occasions for the R.A.F. to catch the enemy in some strength, often with satisfactory results. Vengeances soon proved the accuracy of their bombing

and became an important weapon for close support work in country somewhat less close than that on the Manipur front. The radius of action of the Vengeance, about 220 miles, was a limiting factor and up to November, 1943 there had been no encounter with enemy fighters to test its fighting qualities. Apart from these factors, however, the Vengeance proved an admirable aircraft and once the teething troubles had been overcome it proved very simple to maintain and achieved the highest serviceability rate of any aircraft in the Command.

ILJ51/28
Report by
224 Group
Jun.-Nov. 1943

38. On the days when weather allowed, Hurricanes and Beaufighters swept the coastal waterways south of Akyab, in Hunter's Bay, east of Ramree and as far south as Sandoway and Gwa Bay. Hurricanes concentrated on the northern part of this area and also north of Akyab in the Mayu and Kaladan rivers. These operations considerabky reduced the enemy's freedom of movement, particularly as no all-weather roads existed to replace water transport, consequently he was often restricted to movement at night or in bad weather. Operations in central Burma were carried out principally by Beaufighters. Owing to the limited ceiling of Blenheims it was seldom possible to send them into this area as weather conditions invariably involved a climb to at least 15,000 feet in order to clear the cloud over the hills. Locomotives, rolling stock, rivercraft and motor transport constituted the targets for R.A.F. aircraft in central Burma against which telling blows were delivered against Japanese communications in an area ranging from Katha in the north to Henzada in the south and as far east as the Toungoo-Mandalay railway. In addition to these attacks, fourteen sorties were flown by Beaufighters against oil storage tanks at Yenangyaung, Chauk and Yenangyat oilfields. Fourteen tanks were hit, four of which caught fire with spectacular results. In attacks on Japanese communications in central Burma the R.A.F. flew 175 sorties during July and August of which fifty-nine were abortive mainly owing to bad weather. The enemy reacted by greatly increasing his light A.A. and machine-gun defences along the waterfronts of his riverside towns, in particular at the oil towns and chief trans-shipment ports on the Irrawaddy.

39. It will be seen that despite the monsoon weather a considerable scale of effort was maintained during the worst months of July and August. From September onwards, when the weather began to improve, effort increased proportionately. The last Blenheim squadron was withdrawn in September and the task of tactical bombing in support of the 26th and 7th divisions in Arakan was undertaken solely by Vengeances, with Hurricanes assisting with low-level strafing attacks. But targets in the Maju peninsula became increasingly scarce and difficult to locate owing to the great efforts made by the enemy to disperse and camouflage his positions. However, the aircrews of Hurricanes and Vengeances, with increasing skill and experience, were able in large measure to frustrate the enemy's defensive arrangements and our attacks continued to reap a useful dividend. This also applied to attacks by Beaufighters in central Burma. With the advent of another Beaufighter squadron on 10 September the harassing attacks on enemy lines of communication became more intense. Included in the targets for Beaufighters were five large paddle steamers, four of which were made useless on the Chindwin and Irrawaddy by air attack. The remaining steamer did not venture northward within range of our long range fighters and thus escaped destruction.

40. During the period under review - 1 July to 15 November - the R.A.F. in Arakan flew some 622 light bomber, 873 offensive fighter, 342 tactical reconnaissance and 472 Beaufighter sorties, totalling in all 2,309 sorties. Vengeance and

Blenheim light bombers dropped nearly 217 tons of bombs. The claims of offensive fighters are impressive since they destroyed or damaged some 2,989 rivercraft, 152 locomotives, 491 railway waggons and 184 M.T. vehicles.

Air Transport

O.R.B. 31 Squadron Jul.-Nov. 1943

41. The return of Wingate's intruder force in May, 1943 did not diminish the activity of transport aircraft on the Burma front. During the ensuing monsoon period the regular commitments to Fort Hertz, north Burma and the Chin hills were augmented by the needs of many army units isolated by the seasonal interruption of communications throughout the whole battle area southwards to Arakan. Indeed, despite the weather and the formidable difficulties of the ground crews, the number of supply dropping sorties flown and the tonnage of supplies dropped in July, 1943 reached record figures - 286 sorties and 784 tons - figures reached with an average of only fifteen aircraft. This transport work went on throughout the monsoon period and up to 15 November 1,059 sorties had been flown and 2,930 tons of supplies delivered to army units. Bad weather interfered with operations and 110 sorties were completely unsuccessful, ninety-seven of them during the worst months of July, August and September. The principal area of air supply lay in the Chin hills where 2,070 tons was dropped. The Chinese-American forces in north Burma received 454 tons and another 276 tons went to troops in Arakan cut off by flooding. The remaining 130 tons, most of which was landed, was delivered to Fort Hertz where in addition to supplies reinforcement troops were flown in.

Appendix 1 to O.R.B. 31 Squadron Oct. 1943

42. These figures are creditable bearing in mind the hazards of the monsoon over mountainous jungle country, and yet only one aircraft was lost. The whole transport effort was accomplished by No. 31 Squadron whose aircraft operated from Agartala for supply in the Chin Hills and Arakan, and from Din Jan (Assam) for north Burma and Fort Hertz. Their average serviceability throughout the period amounted to only ten Dakota aircraft. At the end of the rainy season General Giffard, G.O.C-in-C., Eastern Army, expressed the view in a letter to the A.O.C. Bengal Command, that without the maintenance of supply by air the army could not have held throughout the monsoon the positions in which it had entrenched itself at the end of the campaigning season in May. He added that owing to the efforts of No. 31 Squadron none of the troops had ever gone hungry and many friendly inhabitants of distant tracts had been saved from great hardship.

IIJ51/28 Part II and O.R.B. No. 353 Squadron

43. In addition to air supply in the forward areas, No. 31 (Dakota) Squadron carried out regular transport journeys between Calcutta and airfields farther east. These services, besides carrying passengers and mail, were used extensively for transporting A.O.G. spares. In no single instance was a service cancelled or curtailed owing to weather, though on some occasions flooded runways caused some interruption. Elsewhere in India and Ceylon Hudsons of No. 194 Squadron maintained a regular schedule of air services between the principal towns. In August, 1943, No. 353 Squadron ceased G.R. operations and moved to Palem, near New Delhi, for internal airline work. This Squadron took over the task from 194 Squadron on 6 September and by 15 November had flown 1,670 hours carrying freight, passengers and mail between the widely dispersed nodal centres of India and Ceylon.

Strategic Bomber Operations

44. The majority of strategic bombing in Burma during the

monsoon was carried out by the Tenth United States Army Air Force. They had available about forty heavy and forty medium bombers whereas the R.A.F. could muster but an average of twelve aircraft. The R.A.F. had No. 159 (Liberator) Squadron and Nos. 99 and 215 (Wellington) Squadrons available for night operations and during the period they flew 404 sorties and dropped 585 tons of bombs. This small effort was not entirely the result of bad weather conditions. The Wellington was not a suitable aircraft for tropical use and the squadrons suffered a great deal of unserviceability. In September, No. 215 Squadron's effort was reduced by the use of Wellingtons for coastal patrols owing to the absence of G.R. aircraft. Moreover, in September, 1943 the effort of No. 215 Squadron was reduced while they re-equipped with Wellington Mark X aircraft. The shortage of trained Liberator crews forced one flight of No. 159 Squadron to devote its energies entirely to training in order to produce sufficient aircrews for two Liberator squadrons by the end of the monsoon. Hence only an average of four Liberators were available for operations. The Americans, operating four squadrons of B-24s and three of B-25s by day, were perhaps better organised. During the period they flew no less than 3,905 sorties and dropped over 3,450 tons of bombs on targets in Burma.

O.R.B. No. 221 Group July, 1943

45. Bad weather prevented R.A.F. night bombing until 20 July when effort was directed exclusively against communications targets and supply dumps. On 20/21 July, sixteen Wellingtons were detailed to attack Taungup, the terminus of the Prome-Taungup road and used by the enemy as a collecting centre for supplies destined for the Arakan front. Owing to bad weather only seven aircraft located the primary target, four bombed Akyab and the other five returned to base with their bombs. The following night Taungup was again raided and of twelve Wellingtons despatched, six bombed the primary target Taungup, three bombed Akyab and three returned with their bombs. Also on 21 July, three Liberators were sent to bomb railway targets at Sedaw. One Liberators were sent to bomb railway targets at Sedaw. One Liberator failed to locate the target and bombed Sagaing instead. Akyab received two raids, 14 and 28 August, in the course of twelve Wellington sorties. Taungup was again raided on 26 and 31 August but these raids were not very successful since ground haze prevented accurate bombing.

A.M. File CS. 28027 Despatch by ACM. Peirse

46. During July and August, 1943 the Tenth United States Army Air Force, operating by day, effectively attacked Thilawa and Syriam oil installations at Rangoon and took a heavy toll of rolling stock in a series of raids on railway targets. The vital Myitnge bridge was cut and the Gokteik viaduct damaged. B-24s also attacked eight large vessels off the Burma coast and in the vicinity of the Andaman and Nicobar islands. Two were claimed as sunk and the remainder damaged.

IIJ51/28 Part II Report by 221 Group

47. In September, 1943 there was little R.A.F. night bomber activity but as the monsoon decreased in severity so the scale of effort increased. Targets ranging from Kalewa to Rangoon and from Akyab to Heho were attacked during sixty-three Liberator and 244 Wellington sorties carried out between 1 October and 15 November. The main effort was against railway targets which received eighteen raids. Airfields were raided six times, Akyab seven, Rangoon four and enemy supply dumps eight times. The heaviest raid took place on the eve of the formation of South East Asia Command - 15/16 November - when six Liberators and twenty-one Wellingtons bombed the enemy camp and railway station at Pegu and dropped over forty tons of bombs. The emphasis of American attacks during October and November was on enemy

lines of communication in Burma. These attacks were particularly effective as they were carried out at a time when the enemy was making strenuous efforts to reinforce and build up supplies in Burma for the post-monsoon campaigns.

ILJ54/45 Japanese Sources

48. There is no doubt that the strategic bombing of U.S.A.A.F. and R.A.F. aircraft had a considerable effect upon Japanese communications. In 1942 Japanese sea transport carried out its task without much hindrance. In 1943, however, enemy shipping was frequently intercepted by aircraft and submarines and barely a third of the supplies destined for the Japanese forces in Burma reached their destination. Transport within Burma was originally by rail but as Allied air attacks increased in intensity the capacity of railways fell and the Japanese had to rely more and more on rivercraft and road transport which in turn was subjected to constant attack by R.A.F. tactical aircraft. Moreover, the fear of Allied air attack is illustrated by the fact that the enemy concentrated more on defence than hitherto. During the monsoon of 1943 the enemy, instead of withdrawing his fighters to Malaya for rest and training, retained them in the Rangoon area as a counter to Allied bombing raids. But their attempts at interception failed initially owing to poor radar facilities. Towards the end of the monsoon, however, Japanese radar cover improved and anti-aircraft defences were augmented. The result was the loss of sixteen American bombers in daylight attacks. The enemy too suffered severe losses; the Americans claimed the destruction of twenty-four enemy aircraft in air combat in addition to eighteen probably destroyed and thirty-one damaged.

Clandestine Air Operations

49. The monsoon inevitably interfered with clandestine air operations since, above all, accurate pin-pointing of dropping zones was essential to the safety of human cargoes. Moreover, unsuccessful sorties placed a great strain on agents, particularly if operations had to be attempted several times. Personnel to be dropped by parachute in hostile country were naturally keyed up for the task and the failure of a sortie invariably produced an anti-climax. The procedure had then to be carried out again and the adverse effect upon morale increased correspondingly with each attempt. Thus operations had to have a reasonable chance of success before being attempted. It is hardly surprising therefore, that R.A.F. activity in the realm of clandestine air operations was small during the worst months of the monsoon. Indeed, from July to September, 1943 only two sorties were attempted.

AHQ(I) File 161/Int. Encl. 22A

50. Operation Hiccups took place on the night of 16/17 August and although the weather was rather poor the Hudson found the dropping zone, near Toungoo, and released from 700 feet a container of supplies. As cover for the operation leaflets were liberally sprinkled over various townships during both outward and inwards flights. The only other sortie mounted during the height of the monsoon was yet another attempt at operation Harlington II which had so often thwarted the efforts of the R.A.F. earlier in the year. It was again unsuccessful; the Hudson located the dropping zone in spite of bad weather conditions but finding it covered with 10/10 cloud at 5,000 feet the sortie was abandoned.

AHQ(I) File 161/Int. Encl. 32B

51. No further operations were attempted until the weather improved in October. This was a month of signal achievement since eight operations, comprising nine sorties, were successfully accomplished during the moon period - 11 to 19 October. Two operations, Blade and Dilwyn were flown on 11/12 October during which one agent was safely delivered to a dropping zone

near Prome, and two agents and four containers to a dropping zone near Bhamo. On the following night Harlington II was completed, three men and one container being dropped in the Toungoo area. A further phase of the Harlington operation was accomplished on 14/15 October when two more agents and some supplies were parachuted into a dropping zone, again near Toungoo. In the meanwhile, on 13/14 October, two agents were dropped near Myingyan in an operation known as Mahout. The only daylight operation of the period took place on 16 October when three Hudsons dropped supplies at Haka in the Chin hills. The highly successful October moon period was rounded off on 18/19 October by a single Hudson which completed Brass and Pigeons. First of all the aircraft dropped a single container near Bassein and on the homeward flight, some pigeons were released over Akyab. Though the reason for operation Pigeon is not clear it was presumably an experiment to see whether these feathered creatures could be used for sending messages back to friendly territory.

AHQ(I) File 160/Int. Encl. 32B Encl. 69A

52. Since this chronicle covers a period ending on 15 November only two further clandestine air operations remain to be recorded. The first of these, operation Spiers, took place on 12/13 November when a Hudson, using Chittagong as an advanced landing ground, took off with the intention of dropping four men and six containers near Meng Peng, some 100 miles east of Bhamo. The weather was good and the target area easily found but owing to the very rough and hilly nature of the terrain, the pilot decided against dropping his people, a decision confirmed by the conducting officer. Moreover, the maps of the area were found to be inaccurate. The final operation flown under the auspices of Air Headquarters, India was another phase of Harlington during which seven containers were successfully dropped in the Toungoo area. Of the twelve operations carried out during the period 1 July - 15 November, ten were entirely successful.

IIJ50/47/32 Notes by Int. Branch H.Q. A.C.S.E.A.

53. This narrative is only concerned with clandestine air operations and it should not be assumed that aircraft constituted the sole means of depositing agents into enemy territory. Submarines were also used for long range work and motor launches performed clandestine work in areas nearer home. But the lack of submarine transport for agents coupled with the obvious advantage in the speed with which aircraft could accomplish their allotted task led the clandestine organisations vigourously to plan a number of Catalina operations. The value of Catalinas for this work had already been demonstrated by No. 240 Squadron in April, 1943, but these aircraft were fully committed to their normal role and it was not possible to attempt further clandestine operations with flying boats during the period under review. Planning and preparation for Catalina operations continued, however, and in January, 1944 they again participated in this hazardous and important form of warfare.

54. The future prospects of clandestine air operations were good. Up to November, 1943 the demands for air transport for the clandestine organisations were always in excess of the amount which could be conveniently allocated. It was hoped that more aircraft would be made available and the experience gained during 1942 - and 1943 led to greater co-operation between the controlling bodies and consequently to economy in effort. Thus there was ample evidence that in the future the scope of clandestine air operations would broaden and with better understanding of the complex problems of both air and military aspects, it seemed that the work would develop into a potent factor in the war against Japan.

Photographic Reconnaissance

55. One of the most notable features of the period under review was the development of photographic reconnaissance. In July, 1943 strategical reconnaissance was carried out by Spitfires, Mosquitos and B-25 (Mitchells) of No. 681 Squadron, Calcutta and No. 160 Squadron's Liberators operating from Ceylon. On 1 November a second P.R. squadron, No. 684, was formed at Calcutta. Four B-25s, two Mosquito IIs and three Mosquito Mark VI were transferred to the new unit from No. 681 Squadron which then became a single-engined P.R. squadron. It was planned eventually to re-equip No. 684 Squadron with Mosquito Mark IX aircraft, the first of which began to arrive in October, 1943, but this type had not seen operational service in India by 15 November. Some 330 sorties were flown by P.R. aircraft in the period under review by aircraft in Bengal and Liberators mounted a further twenty sorties.

A.M. File CS. 28027 Despatch by ACM. Peirse

56. Regular cover was obtained of all objectives in Burma, China, and the Andamans by No. 681 and later 684 Squadron which included airfields, railways, rivers, ports and large towns. As a result of these efforts it was possible to make close estimates of enemy strengths and dispositions, and to keep a close watch on the enemy's supply lines. Towards the end of the period Moulmein and the Burma-Siam railway (under construction) were covered and regular visits were paid to the Andamans. The main task, however, was to provide intelligence cover of Sumatra, Malaya, the Andamans and Nicobar islands for future operations. Without this vital information the hazards of a seaborne assault across the Indian Ocean would have greatly increased. Mosquitos could only reach the Andamans and it was necessary to employ Liberators for most long range work. Although the Liberators performed some useful work their speed was inadequate. This combined with the enemy's warning systems in the Andaman's and northern Sumatra led to the loss of three Liberators. It was therefore decided to obtain photographs of these areas by using formations of three aircraft whose combined firepower would minimise the dangers of enemy interception. A Flight of No. 160 Squadron therefore began intensive formation training. This form of obtaining photographic cover was extremely expensive and, owing to the limitations of range caused by additional armaments in the aircraft, could never provide all the information necessary. The answer was to use later marks of Mosquitos but such aircraft had not been made available by November, 1943.

General Reconnaissance

57. Ultimately the responsibility of general reconnaissance work around the coasts of India and Ceylon fell to No. 222 Group, Colombo, in consultation where necessary with the A.O.C. Bengal Command and the A.O.C. No. 225 Group. For the fulfilment of G.R. tasks there were available in July, 1943 some ten squadrons - six Catalina, two Beaufort, one Hudson and one Liberator. Air H.Q. Bengal though responsible for coastal patrols along the Burma coast had, in fact, no G.R. aircraft and had therefore to use Wellington bombers. The order of battle remained unchanged until 8 August when No. 353 (Hudson) Squadron flew its last G.R. sortie prior to changing its role to that of a transport squadron. In September a second Liberator squadron, No. 354, formed at Cuttack and commenced operational duties on 1 October. The tasks allotted to the general reconnaissance squadrons comprised long range photographic reconnaissance(1) of northern Sumatra and

(1) See Page 143.

areas adjoining the Andaman and Nicobar islands, medium and long range reconnaissance over the Bay of Bengal, over trade routes south of Ceylon and in the Arabian Sea as far west as the gulf of Oman, anti-submarine and shipping escorts.

A.M. File CS. 28027

58. The forces available being limited, it was necessary to exercise strict operational control in order that effort might not be wasted. With this end in view the A.O.C. No. 222 Group, from July, 1943 onwards, exercised operational control of all G.R. aircraft in the Command. For the G.R. aircraft based in India this control was exercised through the A.O.C. No. 225 Group an exception being that the A.O.C. Bengal continued to be responsible for patrolling the strip of coast from Chittagong to Sandoway. Control of operations in the Arabian Sea was also strengthened. A Naval/Air operations room was established at Bombay under an R.A.F. Group Captain, who was responsible under No. 225 Group for co-ordinating all G.R. operations in the eastern area of the Arabian Sea. From Bombay control was exercised over the operations room at Karachi, and over the flying boat detachments at Bombay and Cochin. H.Q. 225 Group agreed that, although normal operations by aircraft based at Masira would be controlled locally, G.R. commitments in the Persian Gulf would be placed under the superior operational control of Bombay. Similar reorganisation, involving the establishment of an operations room at Madras, the strengthening of Cuttack as a G.R. base and the posting of an R.A.F. liaison officer to work with the Naval Officer in Charge, Vizagapatam, was carried out on the east coast of India.

59. This reorganisation made it possible to carry out the tasks allotted with increased efficiency. The threat of seaborne attack against India and Ceylon receded and it was anticipated that there would be at least two or three months' warning as a result of an initial concentration of shipping. Moreover, if an invasion did become imminent, it was thought that at least eighteen hours warning would be available of the final destination of convoys. Thus it was decided to rely on the existing strength for immediate defence but to take all measures such as the organisation of fighter control and the installation of communications, which did not involve the holding of stock. If a threat of invasion did occur it was planned to move in reinforcement squadrons quickly. Isolated raids were, however, still a possibility and the reorganisation on the east coast of India, combined with the strengthening of the control system, made it likely that any raids, if they occurred, would be adequately countered.

60. General reconnaissance over the Indian Ocean was carried out effectively in all weathers and comprised shipping escorts, anti-submarine patrols and air/sea rescue sorties. Submarines were sighted on several occasions and attacks made on them by Catalina aircraft though only one enemy submarine was claimed as damaged. Shipping losses were light and the majority of ships in the numerous convoys escorted by G.R. aircraft arrived safely at their destinations. Catalina flying boats flew some 348 sorties from July to 15 November, Liberators flew seventy-seven sorties and medium range G.R. aircraft 448 of which 170 were mounted by Wellington bombers from Bengal. These sorties involved over 70,000 flying hours.

O.R.B. AHQ Bengal July-Nov. 1943

61. Bengal Command was responsible for seaward reconnaissance to a depth of twenty-five miles from the coast along the entire Arakan and Sundabans coastline from Calcutta to Pagoda Point at the mouth of the Bassein river. A close watch was maintained for enemy shipping supplying the forward enemy bases of Taungup, Kyaukpyu and Akyab and information was frequently passed to No. 224 Group so that attacks could be made on shipping in the area. The coastal patrols were

carried out daily, weather permitting, by Wellingtons of Nos. 99 and 215 Squadrons. The experience of previous months had shown that the Japanese were extremely wary of adventuring their shipping westwards by day, preferring to use the plentiful rivercraft of Burma and fast creek steamers under cover of darkness. Consequently along the coast they had a number of dispersed bases with concentrations of rivercraft, notably at Kyaukpyu, Sandoway and Gwa. As from 10 July the coastal patrol aircraft were despatched in duplicate, usually at one hour intervals. The first aircraft executed a normal search patrol and the second, carrying a heavier bomb load, would attack suitable targets. Weather forced many patrols to be curtailed but the experiment was successful and a very satisfactory toll was taken of rivercraft and supply dumps as well as on occasions producing valuable photographic information. The intruder patrols lasted until 7 September when the improvement in the weather demanded the maximum number of aircraft for night bombing. As already mentioned Wellingtons flew 170 sorties during coastal patrols of which thirty-three were abortive or partly so.

A.M. File
CS. 28027

62. Owing to the shortage of air/sea rescue aircraft and vessels few such units became operational and the important work of locating survivors of shipwrecked vessels or aircraft forced down in the sea devolved upon operational G.R. squadrons. Twenty-two incidents were recorded during the period, ten of which occurred in the Bay of Bengal, two in the Arabian Sea and eight off Ceylon, involving some one hundred and eleven persons, sixty-nine of whom were rescued. The credit for most of this work is due to the G.R. squadrons. One of the Chittagong air/sea rescue launches in its first operational foray succeeded in rescuing three out of five members of a ditched Wellington crew and on another occasion a Lindholm dinghy gear was dropped to a distressed U.S.A.A.F. crew.

SECTION XII

RECAPITULATION AND SUMMARY

1. In the foregoing pages an attempt has been made to record and analyse the activities of the air forces in the war against Japan on the India-Burma frontier. The narrative tells the story of the small Allied campaigns and air operations which took place over a period of twenty-one months, from March 1942 when India was first thrust into the front line of battle, until November 1943 when Admiral Lord Louis (later Earl) Mountbatten became Supreme Allied Commander of the South East Asia theatre of war. It is a story of a war fought in places remote from and largely unknown to occidental peoples, a struggle which at first sight is both complicated and obscure, without any clear purpose or high priority. Thus at this juncture it may be deemed necessary broadly to recapitulate the sequence of events and to summarise the achievements of the Allied air forces.

2. Following the Japanese attack on Pearl Harbour, the initial impetus of the enemy's advance swept away in five catastrophic months all Allied control in the entire subcontinent of Indo-China. By May 1942 the Japanese had reached the threshold of India where they paused, so it was then thought, to prepare for a further advance into India. But unknown to the Allies the 700 mile long mountain barrier, which divides India from Burma, marked the end of the initial Japanese westward advance. The enemy required a perimeter which could be easily defended and the mountains of the India-Burma border provided that need. They hoped, foolishly perhaps, that the perimeter could be held long enough to convince the Allies that the war must end in stalemate and that a negotiated peace was the only outcome. In the spring of 1942, however, it seemed that the Japanese would advance beyond Burma. Ceylon had been attacked by an enemy task force in April and it was known that the Japanese were building up a substantial force in Burma. On the Allied side of the front line, India was unprepared and ill-equipped for war and the air forces, now the first line of defence, were in a parlous state. When the R.A.F. pulled out of Burma in May 1942 and joined the minute air force in India, there were on paper, about fourteen squadrons, most of them battle weary and sadly depleted. Many had no aircraft at all while others were equipped with obsolescent types with few reserves behind them. Batches of air force personnel, disorganised and without equipment, had contrived to escape to India after the Allied defeats in Malaya, the Netherland East Indies and Burma. These officers and men, together with others fresh from the United Kingdom began to build the air force anew. But apart from a few aircraft which came out of Burma, there was only a handful of obsolete Service aircraft and converted air liners that had composed the former Air Forces in India. A small and out of date maintenance organisation, designed to keep four or five squadrons operational on the North-west frontier, existed in that area of India, over a thousand miles from the new scene of operations in Bengal. There were no roots in India from which a new and powerful air force might spring. The seeds had to be sewn in virgin earth and many trials and tribulations experienced before a harvest was reaped.

3. Nevertheless, a few fighter squadrons were sent to Ceylon and India for their defence and a small air striking force was assembled. In Ceylon, newly arrived Hurricanes opposed the Japanese Easter day attacks on Colombo and Trincomalee while in Bengal R.A.F. fighters waited for the anticipated Japanese air assault which never came. At the

same time a handful of Blenheims and an odd Wellington or two bombed targets in Burma as often as the serviceability of the aircraft would allow. Catalinas and Hudsons patrolled the waters of the Indian Ocean and the Bay of Bengal. A solitary R.A.F. transport squadron in Bengal equipped with worn out DC2 and DC3 aircraft performed prodigious feats in evacuating service personnel and civilian refugees from Burma during April and until 8 May 1942. Thereafter, supplies were dropped by parachute to many of the refugees who were trying to reach the safety of Assam. The background against which the air forces operated was one of torrid heat, disease, flies and similar afflictions. The achievements of the personnel concerned can never be understood unless these conditions are known. The summer of 1942 was the hottest known in India for many years and heat exhaustion among white and black people alike was commonplace. For weeks it was the same; airmen sweated to erect and maintain aircraft under appalling conditions; fighter pilots maintained a ceaseless though fruitless vigil. Towards the end of May, however, the south-west monsoon broke over north-east India and rendered Japanese air and other operations against India unlikely.

4. The monsoon gave the air forces four or five months in which to reorganise, train and equip for the battles expected to begin once the rains had passed. But the monsoon of 1942 and those of subsequent years were periods of prolonged discomfort for the men in the forward areas. So-called living quarters were often waterlogged, beds were perpetually damp and the high humidity of the atmosphere increased the torment of prickly heat and other skin diseases. Shortages, and there were so many, inevitably worsened during the monsoon and produced an abundance of maintenance problems which technical personnel endeavoured to resolve with the barest minimum of tools and equipment. It is hardly surprising, therefore, that no serious attempt was made to fly through the monsoon of 1942. For the airmen who were the survivors of the Burma retreat as well as those who were fresh from temperate regions, the overpowering humid heat and the torments of insects and the mounting incidence of malaria, might easily have combined with the general atmosphere of defeat, to affect morale to an extent which interfered with fighting efficiency. Yet it was never quite like that. Exhibiting remarkable powers of endurance and an equally remarkable sense of humour, personnel in the forward areas contrived to overcome their various difficulties. There was a similar story in all the forward units of not enough equipment, too little to drink or smoke, a monotonous diet of the hated bully-beef and soya link(1). The only abundance was of heat, rain, dysentery and malaria.

5. In the air there were other problems to face. The towering cumulo-nimbus clouds over India and Burma made the area one of the most perilous in the world for flying. It is true that the aircrews had not the flak of Europe to face but they could never be entirely unaware of the jungle below, the certainty of fever and the probability of torture if captured by the Japanese. While the airmen used the lull in air operations during the monsoon to assemble, train and prepare for the battles of the coming dry-season, a few landing grounds were laid around Calcutta and near Chittagong. Inadequate warning systems had proved fatal to the air forces in the first Burma campaign and improvement of the warning system became the chief occupation of Bengal Command. But adequate equipment in sufficient quantity was not forthcoming from the west and much reliance had to be placed upon the

(1) A particularly revolting form of sausage.

observer corps posts established near important centres and along the frontier. To overcome the airfield problem a public highway in the heart of Calcutta was used as a runway. Hurricanes based on this unusual strip, called Red Road, remained on the alert throughout the monsoon but only a few abortive scrambles resulted from their vigilance. Meanwhile, R.A.F. transport aircraft carried on their mission of mercy, seeking out and dropping supplies to columns of dying refugees in north Burma who had been cut off by the monsoon waters. In the far north of Burma a small British garrison and some women refugees were isolated at Fort Hertz and threatened by the advancing Japanese. A small rough piece of ground was levelled and an R.A.F. transport aircraft succeeded in landing and bringing out twenty-three souls. The Japanese, however, did not reach Fort Hertz and in August a British team, headed by an Australian Colonel, was flown in, their mission being to raise and train Kachin levies for partisan warfare. Henceforth they were entirely dependent upon air supply.

6. Although the primary objective of the British forces in India was the defence of the country, the Allies were not unmindful of the fact that China must be supplied with the materials of war and that Burma must be re-occupied at the earliest opportunity. British and American interests in India and Burma were widely divergent. The primary American interest lay in utilising India as a springboard for forwarding supplies to China, while the British interest lay in expelling the Japanese from Burma, mainly for political reasons. When the Japanese occupied Burma the only land link with the Chinese - the Burma Road - was severed and so the Americans instituted an air transport service from Assam across the mountain to China. The Americans thought it essential to re-open land communications with China and planned to develop the Ledo Road, originally a British project, from Assam through north Burma eventually to join the old Burma Road at some point beyond Myitkyina. The British, on the other hand, were sceptical about the Ledo Road and thought that the best way to re-open land communications with China was to re-occupy Burma, thereby bringing the old Burma Road back into use. Since it was unlikely that the necessary resources for the re-conquest of Burma could be made available for some time the Americans decided to pursue their Ledo Road project and this led to keen competition between the two Allies, particularly for engineering resources.

7. As there was no hope of India receiving sufficient resources for major operations against Burma during the winter of 1942-43, Allied objectives were somewhat limited in scope. The anticipated offensive by Lt. Gen. Stilwell's Chinese forces from Ledo to clear the trace of the Ledo Road could not take place and operations were confined to two small scale British offensives. The first was the capture of Akyab in Arakan; the second was Wingate's intruder march into north central Burma. For the Arakan operation No. 224 Group and its tactical squadrons moved forward to Chittagong in December 1942. But while preparations were under way for the Arakan offensive, Calcutta was subjected to enemy air attack. In December 1942 India Command possessed no specially equipped night fighter aircraft, consequently the enemy night raids at the end of December 1942 were made without serious opposition from the R.A.F. Although none of the raids was heavy, only twenty-three sorties being flown in five attacks, Hurricanes operating on the "Cat's eye" principle managed to shoot down one enemy bomber. The effect upon Calcutta's population was serious, however, and some temporary dislocation resulted from a fairly heavy exodus of labour.

8. Calcutta was truly a magnificent strategic target for bombing since nearly all the supplies for the various fronts passed through the port. Even light raids, provided they were maintained at regular intervals, would have paid handsome dividends to the Japanese but their air force, trained and equipped as it was for tactical work, and controlled by commanders who did not appreciate the virtues of strategic bombing, failed to take advantage of a very favourable situation. Following the Calcutta raids of December 1942, the A.O.C-in-C. made an urgent appeal to London for night fighter aircraft to defend this vitally important base. In response a flight of A.I. Beaufighters arrived from the Middle East in January 1943. When the enemy renewed his attacks on Calcutta during the January moon period he encountered stiffer opposition. During the enemy's first January raid, a Beaufighter shot down all three enemy aircraft attacking and a few nights later two enemy aircraft were destroyed and one probably so out of a total of four. The Japanese Air Force then gave up their bombing of Calcutta. It is remarkable indeed that the presence of four R.A.F. Beaufighters denied the enemy the right to bomb the most important strategic target in India.

9. In Arakan the Army's advance had begun well. By Christmas 1942 they had penetrated down the Mayu peninsula south of Maungdaw and Buthidaung. But the columns outstripped their supply organisation and some unseasonal rain washed out their land supply route. The delay of ten days when supplies were being brought up proved fatal and when the advance was resumed on 6 January it was too late. The Japanese had reinforced Arakan and held our forces at Donbaik and Rathedaung. Throughout the advance Hurricanes and Blenheims supported the ground forces, the former by ground strafing enemy positions and communications and the latter by bombing targets at the request of the army. The tactics used were not, however, appropriate. The enemy withstood our bombing, machine-gun attacks and ground assaults and in the middle of March 1943 began a counter offensive which drove our forces back to the positions they had held at the beginning of operations. The Japanese offensive followed familiar lines. Columns infiltrated through the jungle behind our forward troops thus giving our forces the alternative of retreat or annihilation. While the enemy was outwitting the land forces he made full tactical use of his small air force. Simultaneously with his ground assault he threw his available air strength against our airfields and communications in Arakan in order to divert our fighters from close support work and to interrupt supplies destined for the forward troops. In this he achieved some measure of success but the R.A.F. by increasing their effort partly neutralised the enemy's tactics. It cannot be said that the R.A.F. scored a decisive victory in the air. The Hurricane fighters were slow, out manoeuvred and lacked the support of an efficient warning system. Nevertheless, they did well to share honours. The absence of a suitable weapon for close support operations denied the R.A.F. the chance to sway the issue in Arakan. Blenheims were hardly suitable for precision bombing in jungle country and the Hurricane had not at that time been adapted for fighter-bombing. Moreover, the R.A.F. could not assist the army units threatened with encirclement since no transport aircraft were available to drop supplies. In any case little was known of the tactical use of air transport and had aircraft been available it is likely that the Japanese fighters would have inflicted grave losses on the R.A.F.

10. While the Arakan battle was in full swing, Wingate's incredible 77th Brigade marched eastwards from Imphal in

February 1943. For three months his 3,000 men, maintained entirely by air and what could be purchased locally, marched through north Burma. Militarily, the achievements of this unorthodox force were insignificant and yet they laid the foundation stones of a complete change in tactics and air/land co-operation in jungle warfare. It was proved that large forces could be maintained entirely by air supply and remain independent of land communications for long periods and that R.A.F. officers attached to ground formations could control air strikes to great advantage. But it was fortunate indeed for Wingate and his men that the Japanese made no attempt to interfere with the R.A.F. supply dropping aircraft. It was largely on the strength of Wingate's experiences in 1943 that air supply, a new dimension in air/land strategy, came to be exploited. It was profoundly to affect subsequent campaigns.

11. Unconnected with any land campaign was the work of the R.A.F. and U.S.A.A.F. strategic bomber force. Operating against enemy airfields, communications, troop concentrations and Rangoon, bomber operations were stepped up after the 1942 monsoon and maintained on an ever increasing scale throughout the dry season. A decision was then made that the air forces should fly through the monsoon. Air supply also continued through the rains. In the Chin Hills and at Fort Hertz isolated garrisons were maintained. In Arakan too, air supply was necessary, principally in the Goppe Bazaar area where land communications had been washed away by the monsoon waters. The monsoon employment of fighter and bomber aircraft had been laid down to follow the long standing policy of attacks against the Japanese air force as the first priority. By June 1943, however, the enemy had withdrawn his air forces from all forward airfields in Burma and thus lines of communication became the most important target for R.A.F. and U.S.A.A.F. aircraft. Hurricanes nearer home and Beaufighters farther afield swept enemy controlled waterways and railways with regularity, while Blenheims, Wellingtons and Liberators attacked marshalling yards, supply dumps, Akyab and Rangoon. The Americans using that excellent weapon the B-25 (Mitchell) concentrated principally on bridges while B-24s (Liberators) maintained an offensive against targets around Rangoon and beyond. In addition, the unobtrusive work of the clandestine, coastal and photographic reconnaissance aircraft continued almost without pause.

12. The decision to operate through the monsoon of 1943 was undoubtedly a wise one but it cost the R.A.F. some forty-two aircraft and the Americans twenty-seven. Since enemy activity was negligible it must be assumed that the weather was responsible for the loss of most of these aircraft. Yet despite these inevitable circumstances and the attrition they caused among Allied airmen, the air forces reaped a dividend. The maintained attacks on enemy airfields had kept the Japanese air force back in Siam and our bases free from interference. Attacks on shipping by the U.S.A.A.F. and on Rangoon by both the U.S.A.A.F. and R.A.F. had reduced the capacity of the port of Rangoon by two-thirds. Similarly Akyab, constantly bombed by Blenheims and other aircraft until the close of the monsoon season, was no longer supplied by sea to any extent. This meant that Japanese supplies from Siam to their front lines had to travel over land routes which were under constant attack by fighter aircraft. It is not possible to assess with any degree of accuracy the effect of air operations during 1942-1943 since the work of the air forces was essentially part of a prolonged war of attrition destined to reach its climax in 1945. Only by an overall evaluation can the achievements of the air forces be judged. We do know, however, that the enemy was highly apprehensive of Allied air attack and the great pains he took to protect his aircraft and bases by

ingenious camouflage and extensive dispersal indicates the effectiveness of our air operations.

13. It must be explained that any comparison between the R.A.F. and Japanese air force is bound to be misleading. During the period under review (and for the remainder of the war in fact) the Japanese worked with two separate air forces, one belonging to the navy and the other to the army. The senior commanders of these forces were for the most part, generals and admirals with no special training in air matters and who had never piloted an aircraft in their lives. General Kinoshita, for instance, the Commander-in-Chief of the Japanese Army Air Forces in the southern Area, expressed his regret, when interrogated by R.A.F. officers, that he had no knowledge of real flying. The Army Air Force in fact, entered Burma as a mere adjunct of the ground armies, and so it remained. It was a force well adapted for the close support of advancing armies, but totally unsuited to defensive warfare or strategic bombing. Once the conquest of Burma had been achieved the Japanese air force found itself increasingly unable to deal with the situation there. They were ill-equipped for long range strategic bombing which alone could have enabled them to make a really effective contribution to the defence of their perimeter. A number of raids on Indian territory were made, some of them in considerable strength, but the effort was not sufficiently sustained to make any appreciable difference to the course of operations.

14. Japanese fighter strength in Burma in 1943 probably exceeded that of their bombers and yet Japanese interception of Allied bombing raids never presented a serious problem. This was in spite of the fact that the Japanese fighter pilots in Burma included some of the most able and experienced pilots in the whole of the Japanese air force. Many of them had seen much flying in Manchuria and China. The Japanese air force in Burma was handicapped by the calls made upon the force by operations in other theatres. In particular the Allied successes in New Guinea in 1943 resulted in a withdrawal of a large part of both fighter and bomber strength from Burma.

15. At no time after the initial invasion of Burma were the Japanese able to take the initiative in the air. Burma in fact is an excellent example of the thesis that one of the main causes of Japan's impotence in the air was her failure to recognise the omnipotence of air forces. Indeed, in studying the Japanese air force it is difficult to escape the conclusion that, despite the continuous improvement of aircraft types, Japan remained at least twenty years out of date in her conception of the role of an air force in modern warfare. She persisted in regarding her air forces as mere handmaids of the ground and sea forces and in Burma, as elsewhere, she eventually paid the penalty.

16. November 1943 brings this narrative up to the point when the Commander-in-Chief, India ceased to control operations against the Japanese and the Headquarters of Lord Louis Mountbatten took charge. The story of India Command is one of an uphill struggle, a struggle not only against the enemy who attacked us with the advantages of long preparation and special training, but against all the difficulties of staging a campaign in the unlikely terrain of the India-Burma frontier. It also involved the gigantic task of converting India itself as a base for such a campaign. It is understandable, therefore, that an account of events in India Command should contain a great deal about plans and development during a bleak period. By November 1943 we had learnt enough about the enemy to realise that intense preparation,

not only in resources and paraphernalia of war on land, sea and in the air, but in training our forces to counter Japanese methods of warfare, was necessary if success was to be assured. Indeed, in India Command the Allied forces had to acquire an almost entirely fresh technique in the tactics and strategems of jungle war. Only thus could they gain complete confidence of being able to beat the enemy at his own game and so gain the moral ascendancy over him so essential to final success. Though efforts had been made to train and equip the Allied forces to achieve this object, much remained to be done.

17. In one direction the year 1943 brought a marked change in our favour. That was in the air. Although we had not definitely achieved air supremacy by November 1943, an Allied air victory seemed assured, not only because Spitfires and long range American fighters were arriving in the theatre, but also because the Japanese air force in Burma was being whittled down by the withdrawal of aircraft to other regions. But perhaps the greatest experience gained during 1942 and 1943 lay in the realm of air transport which alone could give the ground forces that mobility necessary to counter Japanese envelopment tactics in jungle country.

18. The history of air supply in India and Burma may be traced back to within a few months of the outbreak of war with Japan. Its expansion and development was dictated alike by the great size and inhospitable nature of the wilderness which formed the battle ground on the Burma front as well as by the scanty ground communications available to the Allied land forces behind their own lines. During the evacuation of Burma by our forces the services of such few transport aircraft as were available were utilised to the full, though the methodical development of air supply as an established practice only gradually became possible. In these early days, No. 31 Squadron, R.A.F. and the 2nd Troop Carrier Squadron, U.S.A.A.F. were the pioneers. The dropping of supplies from aircraft had its modest beginnings on the Burma front from May 1942 onwards, when these squadrons started their maintenance of outlying detachments of Allied troops, isolated radar stations and, later, of army units whose land communications had been cut by the monsoon. The first expedition led behind the enemy lines by the late General Wingate was maintained for some months in the first half of 1943 entirely by air supply. A body of experience was thus being gradually built up as to not only the great flying difficulties involved in the delivery of supplies by air but also concerning the complimentary problems of the army quartermaster and the necessary machinery for administration and liaison between the services concerned. Training and experiment in the use of transport aircraft was carried on at the Airborne Forces Research Centre, an inter-services unit located in the Punjab, with an eye to the future developments that were so clearly being compelled by topographical and strategic needs.

19. It was soon learnt that air supply required more than a sufficiency of transport aircraft and crews, and must be supported by an extensive ground network of administration and equipment. The packing and housing of parachutes was an art in itself, while the collection, disposition and loading of the many and varied articles liable to be sought by troops in the field raised the most complicated problems of administration and storage. A fundamental factor always to be taken into consideration, for instance, was the ability of the nearest railway to stock base airfields to the capacity of the aircraft which might be allotted to use them. The main problem may indeed be summarised as being that of co-ordinating the needs of troops in action against the enemy with the number of transport aircraft

available, with the storage capacity at the base airfield and with the ability of the railway and other lines of communication to keep it supplied. Under the necessity of resolving such difficulties an army organisation was improvised. The basis of the army organisation was the air supply company, with its depots in close juxtaposition to base airfields. The origins of this liaison may be traced to the administrative arrangements improvised by officers of the Royal Indian Army Service Corps to ensure an even flow of freight to transport aircraft when in the course of 1942 the latter first began regularly to give support to the Allied forces. Before the end of that year preparations were in hand for raising a number of air supply companies, of which five were working by the end of the 1943 monsoon at a line of bases stretching from Assam to Chittagong. Under the impetus of the rapid and continuous development of air transport on the Burma front the army air supply organisation grew alike in size and complexity. When therefore the campaigning season of 1943-44 opened, the time was ripe for the application of the experience which had been garnered and the course of future operations as planned was to be dependent upon airborne supply to an unprecedented degree.

APPENDICES

G.169794/TC/7/48

HEADQUARTERS NO. 222 GROUP

Colombo

Air Vice-Marshal J. H. D'Albiac, C.B., D.S.O.	13. 3.42
Air Vice-Marshal A. Lees, C.B., C.B.E., D.S.O. A.F.C.	1.12.42

HEADQUARTERS NO. 223 GROUP

Peshawar

Air Commodore P. H. Mackworth, CBE, DFC.	5. 5.42
Air Commodore A. Gray, MC.	2. 8.42
Air Commodore H. J. F. Hunter, CBE, MC	1. 5.43

HEADQUARTERS NO. 224 GROUP

Chittagong

Air Commodore G. E. Wilson, OBE.	24. 8.42
Air Commodore A. Gray, MC.	2. 1.43

HEADQUARTERS NO. 225 GROUP

Bangalore

Air Commodore P. H. Mackworth, CBE, DFC.	2.6.42

HEADQUARTERS NO. 226 GROUP

Karachi

Air Commodore L. M. Iles, CBE, AFC.	9. 5.42

HEADQUARTERS NO. 227 GROUP

Lahore

Air Commodore F. J. Vincent, DFC.	24. 8.42

SECRET

APPENDIX 2

ORDER OF BATTLE

1 January, 1942

AIR HEADQUARTERS, INDIA

New Delhi

No. 5	Squadron	Mohawk	Fighter	Dum Dum
No. 146	Squadron	Audax	Fighter	Din Jan
*No. 1	Sqn.RIAF	Lysander	Army Co-op.	N.W. India
No. 2	Sqn.RIAF	Lysander	Army Co-op.	Kohat
No. 3	Sqn.RIAF	Audax	Army Co-op.	Peshawar
No. 20	Squadron	Lysander	Army Co-op.	Secunderabad
*No. 28	Squadron	Lysander	Army Co-op.	Kohat
No. 31	Squadron	DC2/DC3 (2 a/c)	Transport	Calcutta
No. 205	Squadron	Catalina (2 a/c)	Flying Boat	Koggala
No. 273	Squadron	Wildebeeste (5 a/c)	Recce.	China Bay

In addition there were six Indian Air Force Volunteer Flights known as Coastal Defence Flights located at India's major ports. They were equipped with Valentia and Atlanta aircraft.

*These squadrons moved into Burma during January 1942.

ORDER OF BATTLE

1 July, 1942

AIR HEADQUARTERS, INDIA

AIR HEADQUARTERS, BENGAL

No. 31	Squadron	DC2/DC3	Tpt.	Din Jan
No. 3	P.R.U.	Hurri/ Mitchell	P.R.	Calcutta

No. 221 Group, Calcutta

No. 60	Squadron	Blen. IV	L.B.	Asansol
No. 113	Squadron	Blen. IV	L.B.	Asansol
No. 215	Squadron	Wellington	M.B.	Pandaveswar
No. 62	Squadron	Hudson	G.R.	Dum Dum
No. 353	Squadron	Hudson	G.R.	Dum Dum
*No. 20	Squadron	Lysander	A.C.	Jamshedpur
*No. 28	Squadron	Lysander	A.C.	Ranchi

No. 224 Group, Calcutta

No. 5	Squadron	Mohawk	Ftr.	Din Jan
No. 67	Squadron	Hurricane	Ftr.	Alipore
No. 135	Squadron	Hurricane	Ftr.	Dum Dum
No. 136	Squadron	Hurricane	Ftr.	Alipore
No. 607	Squadron	Hurricane	Ftr.	Alipore
No. 615	Squadron	Hurricane	Ftr.	Jessore
No. 146	Squadron	Hurricane	Ftr.	Jessore

NO. 225 GROUP, BANGALORE

No. 240	Squadron	Catalina	F.B.	Madras

NO. 222 GROUP, COLOMBO

No. 30	Squadron	Hurricane	Ftr.	Ratmalana
No. 258	Squadron	Hurricane	Ftr.	Ratmalana
No. 261	Squadron	Hurricane	Ftr.	China Bay
No. 273	Squadron	Fulmar	Ftr.	China Bay
No. 11	Squadron	Blen. IV	L.B.	Colombo
No. 22	Squadron	Beaufort	T.B.	Ratmalana
No. 205	Squadron	Catalina	F.B.	Koggala
No. 321	Sqd.Dutch	Catalina	F.B.	China Bay
No. 413	Sqn.RCAF.	Catalina	F.B.	Koggala

There were also a number of squadrons in India in various stages of training and equipment. Some had no aircraft at all.

Nos. 3 and 4 IAF Squadrons were located at Kohat, under No. 223 Group, for operations on the North West Frontier.

* Non-operational squadrons.

SECRET

APPENDIX 2

ORDER OF BATTLE

1 January, 1943

AIR HEADQUARTERS, BENGAL

No. 31 Squadron	D.C.3	Tpt.	Tezpur
No. 194 Squadron	Hudson	Tpt.	Dum Dum
No. 681 Squadron	Hur/Spit/Mit.	P.R.	Dum Dum

No. 171 Wing, Ranchi

*No. 1 Sqn.RIAF	Lysander	A.C.	Charra
*No. 2 Sqn.RIAF	Hurricane	F.R.	Ranchi
*No. 20 Squadron	Lysander	A.C.	Charra
*No. 28 Squadron	Hurricane	F.R.	Ranchi

H.Q. 221 GROUP, CALCUTTA

No. 293 Wing, Calcutta

No. 17 Squadron	Hurricane	Ftr.	Red Road
No. 67 Squadron	Hurricane	Ftr.	Alipore
No. 146 Squadron	Hurricane	Ftr.	Alipore
No. 258 Sqn.Det	Hurricane	Ftr.	Dum Dum
No. 261 Squadron	Hurricane	Ftr.	Dum Dum

No. 170 Wing, Digri

No. 99 Squadron	Wellington	M.B.	Digri
No. 159 Squadron	Liberator	H.B.	Salbani

No. 175 Wing, Cuttack

No. 62 Squadron	Hudson	G.R.	Dhubalia
No. 353 Squadron	Hudson	G.R.	Cuttack

No. 168 Wing, Madhaiganj

*No. 110 Squadron	Vengeance	L.B.	Madhaiganj
*No. 27 Squadron	Beaufighter	TEF.	Kanchrapara
*No. 177 Squadron	Beaufighter	TEF.	Amarda Road

H.Q. 224 GROUP, CHITTAGONG

No. 165 Wing, Chittagong

No. 79 Squadron	Hurricane	Ftr.	Chittagong
No. 135 Squadron	Hurricane	Ftr.	Chittagong
No. 136 Squadron	Hurricane	Ftr.	Chittagong

No. 166 Wing, Fenny

No. 607 Squadron	Hurricane	Ftr.	Fenny
No. 615 Squadron	Hurricane	Ftr.	Fenny

No. 169 Wing, Agartala

No. 5 Squadron	Mohawk	Ftr.	Agartala
No. 155 Squadron	Mohawk	Ftr.	Agartala

No. 167 Wing, Jessore

No. 11 Squadron	Blenheim IV	L.B.	Baigachi
No. 34 Squadron	Bisley	L.B.	Jessore
No. 60 Squadron	Blenheim IV	L.B.	Dohazari
No. 113 Squadron	Bisley	L.B.	Dohazari

H.Q., 222 GROUP, COLOMBO

No. 30 Squadron	Hurricane	Ftr.	Dambulla
No. 258 Squadron	Hurricane	Ftr.	Colombo
No. 273 Squadron	Hurricane	Ftr.	Ratmalana
*No. 160 Squadron	Liberator	G.R.	Ratmalana
No. 22 Squadron	Beaufort	T.B.	Minniriya
No. 217 Squadron	Hudson	G.R.	Minniriya
No. 205 Squadron	Catalina	F.B.	Koggala
No. 413 Sqn.RCAF	Catalina	F.B.	Koggala
No. 321 Sqn.Dutch	Catalina	F.B.	China Bay

H.Q., 225 GROUP, BANGALORE

No. 36 Squadron	Wellington	G.R.	Tanjore
No. 212 Squadron	Catalina	F.B.	Karachi
No. 240 Squadron	Catalina	F.B.	Madras
*No. 6 Sqd.RIAF	Hurricane	F.R.	Trichinopoly
*No. 7 Sqd.RIAF	Vengeance	L.B.	Trichinopoly
*No. 8 Sqd.RIAF	Vengeance	L.B.	Arkonam
*No. 45 Squadron	Vengeance	L.B.	Cholavaram
*No. 82 Squadron	Vengeance	L.B.	Cholavaram
*No. 84 Squadron	Vengeance	L.B.	Vizagapatam
*No. 42 Squadron	Beaufort	T.B.	Yellahanka

H.Q., 223 GROUP, PESHAWAR

No. 3 Sqn.RIAF	Hurricane	F.R.	Kohat
No. 4 Sqn.RIAF	Hurricane	F.R.	Kohat
*No. 215 Squadron	Wellington	M.B.	Chaklala

* Non-operational

SECRET

APPENDIX 2

ORDER OF BATTLE

1 April, 1943

AIR HEADQUARTERS, BENGAL

No. 31	Squadron	Dakota	Tpt.	Dhubalia
No. 681	Squadron	Hur/Spit/ Mitchell	P.R.	Dum Dum

H.Q. 221 GROUP, CALCUTTA

No. 99	Squadron	Wellington	M.B.	Digri
No. 159	Squadron	Liberator	H.B.	Salbain
*No. 177	Squadron	Beaufighter	TEF.	Amarda Road

No. 293 Wing, Calcutta

No. 17	Squadron	Hurri.IIc	Ftr.	Red Road
No. 146	Squadron	Hurri.IIb	Ftr.	Alipore
No. 261	Squadron	Hurri.IIb	Ftr.	Baigachi
No. 607	Squadron	Hurri.IIb	Ftr.	Alipore
No. 176	Squadron	Beauftr.	N.F.	Baigachi

No. 168 Wing, Asansol

*No. 45	Squadron	Vengeance	L.B.	Asansol
*No. 82	Squadron	Vengeance	L.B.	Madhaiganj
*No. 110	Squadron	Vengeance	L.B.	Madhaiganj

No. 170 Wing, Silchar

No. 34	Squadron	Bisley	L.B.	Silchar
No. 42	Squadron	Bisley	L.B.	Rajyeswarpur
No. 155	Squadron	Mohawk	Ftr.	Imphal

No. 171 Wing, Ranchi

*No. 1	Sqd.RIAF	Hurri.I	F.R.	Charra
*No. 2	Sqd.RIAF	Hurri.IIb	F.R.	Ranchi
*No. 20	Squadron	Lysander	A.C.	Charra
*No. 28	Squadron	Hurri.IIb	F.R.	Ranchi dets. at Imphal & Maungdaw

No. 175 Wing, Jessore

No. 36	Squadron	Wellington	G.R.	Dhubalia
No. 62	Squadron	Hudson	M.B.	Jessore
No. 215	Squadron	Wellington	M.B.	Jessore

H.Q. 224 GROUP, CHITTAGONG

No. 165 Wing, Ramu

No. 79	Squadron	Hurri.IIc	Ftr.	Ramu
No. 135	Squadron	Hurri.IIb	Ftr.	Nidania

No. 166 Wing, Chittagong

No. 67	Squadron	Hurri.IIc	Ftr.	Chittagong
No. 136	Squadron	Hurri.IIb	Ftr.	Chittagong
No. 615	Squadron	Hurri.IIc	Ftr.	Fenny

No. 167 Wing, Fenny

No. 11 Squadron	Blen. IV	L.B.	Fenny
No. 60 Squadron	Blen. IV	L.B.	Dohazari
No. 113 Squadron	Bisley	L.B.	Chandina

No. 169 Wing, Agartala

No. 5 Squadron	Mohawk	Ftr.	Agartala
No. 27 Squadron	Beaufighter	TEF.	Agartala

H.Q. 222 GROUP, COLOMBO

No. 30 Squadron	Hurricane	Ftr.	Colombo
No. 258 Squadron	Hurricane	Ftr.	Dambulla
No. 273 Squadron	Hurricane	Ftr.	China Bay
No. 160 Squadron	Liberator	G.R.	Ratmalana
No. 22 Squadron	Beaufort	T.B.	Vavuniya
No. 217 Squadron	Hudson	G.R.	Vavuniya
No. 205 Squadron	Catalina	F.B.	Koggala
No. 413 Sqn.RCAF	Catalina	F.B.	Koggala
No. 321 Sqn.Dutch	Catalina	F.B.	China Bay

H.Q. 225 GROUP, BANGALORE

*No. 7 Sqd.RIAF	Vengeance	L.B.	Pharpamau
*No. 8 Sqd.RIAF	Vengeance	L.B.	Trichinopoly
*No. 84 Squadron	Vengeance	L.B.	Cholavaram
No. 212 Squadron	Catalina	F.B.	Karachi
No. 240 Squadron	Catalina	F.B.	Madras
No. 353 Squadron	Hudson	G.R.	Tanjore

H.Q. 223 GROUP, PESHAWAR

No. 3 Sqn.RIAF	Hurricane	Ftr.	Kohat
No. 4 Sqn.RIAF	Hurricane	Ftr.	Kohat
No. 6 Sqn.RIAF	Hurricane	F.R.	Bhopal
*No. 194 Squadron	Hudson	Tpr.	Lahore

* Non-operational

SECRET

APPENDIX 2

ORDER OF BATTLE

1 July, 1943

AIR HEADQUARTERS, BENGAL

Calcutta

No. 31	Squadron	Dakota	Tpt.	Kharagpur
No. 31	Sqn.Det	Dakota	Tpt.	Agartala
No. 31	Sqn.Det	Dakota	Tpt.	Tezpur
No. 681	Squadron	Hurri/Spit/ Mitchell	P.R.	Dum Dum

H.Q. 221 GROUP, CALCUTTA

No. 293 Wing, Calcutta

No. 136	Squadron	Hurri.IIc	Ftr.	Baigachi
No. 607	Squadron	Hurri.IIb	Ftr.	Alipore
No. 615	Squadron	Hurri.IIc	Ftr.	Alipore
No. 176	Squadron	A.I.Beau.	N.F.	Baigachi

No. 170 Wing, Imphal

No. 42	Squadron	Bisley	L.B.	Kumbhigram
No. 28	Sqdn.Det	Hurri.IIb	F.R.	Imphal
No. 155	Squadron	Mohawk	Ftr.	Imphal

No. 175 Wing, Jessore

No. 99	Squadron	Wellington	M.B.	Jessore
No. 215	Squadron	Wellington	M.B.	Jessore

No. 168 Wing, Digri

No. 28	Squadron	Hurri.IIb	F.R.	Alipore (HQ only)
No. 159	Squadron	Liberator	H.B.	Salbani
*No. 2	Sqn.RIAF	Hurri.IId	Ftr.	Ranchi
*No. 5	Squadron	Hurri.IId	Ftr.	Kharagpur
*No. 45	Squadron	Vengeance	L.B.	Digri
*No. 82	Squadron	Vengeance	L.B.	Salbani
*No. 110	Squadron	Vengeance	L.B.	Digri
*No. 177	Squadron	Beaufighter	TEF.	Amarda Road

H.Q. 224 GROUP, CHITTAGONG

No. 28	Sqn.Det	Hurri.IIb	F.R.	Cox's Bazaar

No. 165 Wing, Comilla

No. 79	Squadron	Hurri.IIc	Ftr.	Comilla
No. 146	Squadron	Hurri.IIb	Ftr.	Comilla

No. 166 Wing, Chittagong

No. 67	Squadron	Hurri.IIc	Ftr.	Chittagong
No. 261	Squadron	Hurri.IIb	Ftr.	Chittagong

No. 167 Wing, Fenny

No. 11	Squadron	Blen. IV	L.B.	Fenny
No. 113	Squadron	Bisley	L.B.	Fenny

No. 169 Wing, Agartala

No. 17 Squadron	Hurri.IIc	Ftr.	Agartala
No. 27 Squadron	Beaufighter	TEF.	Agartala

H.Q. 222 GROUP, COLOMBO

No. 30 Squadron	Hurricane	Ftr.	Colombo
No. 258 Squadron	Hurricane	Ftr.	Dambulla
No. 273 Squadron	Hurricane	Ftr.	China Bay
No. 160 Squadron	Liberator	G.R.	Ratmalana
No. 22 Squadron	Beaufort	G.R.	Vavuniya
No. 217 Squadron	Beaufort	G.R.	Vavuniya
No. 205 Squadron	Catalina	F.B.	Koggala
No. 413 Squadron(C)	Catalina	F.B.	Koggala
No. 321 Squadron(D)	Catalina	F.B.	China Bay

H.Q. 225 GROUP, BANGALORE

No. 353 Squadron	Hudson	G.R.	Cuttack
No. 212 Squadron	Catalina	F.B.	Karachi
No. 191 Squadron	Catalina	F.B.	Karachi
No. 240 Squadron	Catalina	F.B.	Madras
*No. 6 Sqd.RIAF	Hurricane	F.R.	Cholavaram
*No. 20 Squadron	Hurricane	Ftr.	Kalyan
No. 135 Squadron	Hurricane	Ftr.	Arkonam
*No. 34 Squadron	Blen. IV	L.B.	Madras
*No. 60 Squadron	Blen. IV	L.B.	Yellahanka
*No. 84 Squadron	Vengeance	L.B.	Yellahanka

H.Q. 223 GROUP, PESHAWAR

No. 3 Sqn.RIAF.	Hurricane	Ftr.	Kohat
No. 4 Sqn.RIAF.	Hurricane	Ftr.	Kohat
*No. 1 Sqn.RIAF.	Hurricane	F.R.	Risalpur
*No. 7 Sqn.RIAF.	Vengeance	L.B.	Pharpanau
*No. 8 Sqn.RIAF.	Vengeance	L.B.	Pharpamau
*No. 62 Squadron	Hudson	Tpt.	Chaklala
*No. 194 Squadron	Dakota	Tpt.	Basal

SECRET

APPENDIX 2

ORDER OF BATTLE

15 November, 1943

AIR HEADQUARTERS, INDIA

AIR HEADQUARTERS, BENGAL

Calcutta

No. 31	Squadron	Dakota	Tpt.	Kharagpur
No. 31	Sqn.Det.	Dakota	Tpt.	Agartala
No. 31	Sqn.Det.	Dakota	Tpt.	Tezpur
No. 681	Squadron	Spit/Hurri.	P.R.	Dum Dum
No. 684	Squadron	Mos/Mit.	P.R.	Dum Dum

H.Q. 221 GROUP, CALCUTTA

*No. 8	Sqn.RIAF.	Vengeance	L.B.	Charra
*No. 84	Squadron	Vengeance	L.B.	Ranchi
*No. 211	Squadron	Beaufighter	TEF.	Ranchi

No. 293 Wing, Calcutta

No. 79	Squadron	Hurri.IIc	Ftr.	Alipore
No. 136	Squadron	Spit. Vc	Ftr.	Baigachi
No. 607	Squadron	Spit. Vc	Ftr.	Alipore
No. 176	Squadron	A.I. Beau.	N.F.	Baigachi

No. 168 Wing, Kumbhigram

No. 45	Squadron	Vengeance	L.B.	Kumbhigram
No. 110	Squadron	Vengeance	L.B.	Kumbhigram

No. 170 Wing, Imphal

No. 28	Squadron	Hurri.IIb	F.R.	Imphal
No. 34	Squadron	Hurri.IIc	Ftr.	Palel
No. 155	Squadron	Mohawk	Ftr.	Imphal

No. 175 Wing, Jessore

No. 99	Squadron	Wellington	M.B.	Jessore
No. 215	Squadron	Wellington	M.B.	Jessore

No. 184 Wing, Salbani

No. 5	Squadron	Hurri.IIc	Ftr.	Kharagpur
No. 159	Squadron	Liberator	H.B.	Digri
*No. 355	Squadron	Liberator	H.B.	Salbani

H.Q. 224 GROUP, CHITTAGONG

No. 28	Sqn.Det.	Hurri.IIb	F.R.	Cox's Bazaar

No. 165 Wing, Ramu

No. 258	Squadron	Hurri.IIb	Ftr.	Dohazari

No. 166 Wing, Chittagong

No. 67	Squadron	Hurri.IIc	Ftr.	Chittagong
No. 261	Squadron	Hurri.IIc	Ftr.	Chiringa
No. 615	Squadron	Spit. Vc	Ftr.	Chittagong

No. 167 Wing, Dahazari

No.	82 Squadron	Vengeance	L.B.	Fenny

No. 169 Wing, Agartala

No.	27 Squadron	Beaufighter	TEF.	Agartala
No.	177 Squadron	Beaufighter	TEF.	Fenny

No. 185 Wing, Fenny

No.	11 Squadron	Hurri.IIc	Ftr.	Lalmai
No.	60 Squadron	Hurri.IIc	Ftr.	Agartala
No.	146 Squadron	Hurri.IIb	Ftr.	Comilla

H.Q. 222 GROUP, COLOMBO

No.	17 Squadron	Hurricane	Ftr.	China Bay
No.	30 Squadron	Hurricane	Ftr.	Dambulla
No.	273 Squadron	Hurricane	Ftr.	Ratmalana
No.	89 Squadron	A.I. Beau.	N.F.	Vavuniya
No.	22 Squadron	Beaufort	T.B.	Vavuniya
No.	217 Squadron	Beaufort	T.B.	Vavuniya
No.	160 Squadron	Liberator	G.R.	Sigiriya
No.	205 Squadron	Catalina	F.B.	Koggala
No.	413 Sqn.RCAF.	Catalina	F.B.	Koggala
No.	321 Sqn.Dutch	Catalina	F.B.	China Bay

H.Q. 225 GROUP, BANGALORE

No.	135 Squadron	Hurri.IIb	Ftr.	Madras
No.	191 Squadron	Catalina	F.B.	Karachi
No.	212 Squadron	Catalina	F.B.	Karachi
No.	240 Squadron	Catalina	F.B.	Madras
*No.	2 Sqn.RIAF.	Hurri.IIb	F.R.	Trichinopoly
*No.	6 Sqn.RIAF.	Hurri.IIb	F.R.	Trichinopoly
*No.	42 Squadron	Hurri.IIc	Ftr.	Yellahanka
*No.	113 Squadron	Hurri.IIc	Ftr.	Yellahanka
No.	354 Squadron	Liberator	G.R.	Cuttack

H.Q. 223 GROUP, PESHAWAR

No.	1 Sqn.RIAF.	Hurri.IIb	F.R.	Kohat
*No.	3 Sqn.RIAF.	Hurri.IIb	Ftr.	Risalpur
*No.	7 Sqn.RIAF.	Vengeance	L.B.	Campbellpore
*No.	62 Squadron	Dakota	Tpt.	Chaklala
*No.	117 Squadron	Dakota	Tpt.	Dhamail
*No.	194 Squadron	Dakota	Tpt.	Basal

OTHER NON-OPERATIONAL UNITS IN INDIA

*No.	4 Sqn.RIAF.	Hurri.IIb	Ftr.	Bhopal
*No.	20 Squadron	Hurri.IId	Ftr.	Kalyan
+No.	353 Squadron	Hudson	Tpt.	Palem

* Non-operational units

\+ Engaged on internal airline services

APPENDIX 2

10TH UNITED STATES ARMY AIR FORCE

9th Squadron	B-24	H.B.	Pandaveswar
436th Squadron	B-24	H.B.	Pandaveswar
492nd Squadron	B-24	H.B.	Pandaveswar
493rd Squadron	B-24	H.B.	Pandaveswar
11th Sqn.Det.	B-25	M.B.	Kurmitola
22nd Squadron	B-25	M.B.	Chakulia
490th Squadron	B-25	M.B.	Kurmitola
491st Squadron	B-25	M.B.	Chakulia
88th Squadron	P-40	SEF.	Chabua
89th Squadron	P-40	SEF.	Sookerating
90th Squadron	P-40	SEF.	Chabua
528th Squadron	P-51	SEF.	Nawadih
529th Squadron	P-51	SEF.	Nawadih
530th Squadron	P-51	SEF.	Nawadih
459th Squadron	P-38	TEF.	Chabua
7th Squadron	F-5	P.R.	Pandaveswar
1st Squadron	C-47	Tpt.	Sookerating
2nd Squadron	C-47	Tpt.	Din Jan

R.A.F. SUMMARY OF SORTIES FLOWN
1 April, 1942 to 30 November, 1943

	1942									1943											
AIRCRAFT TYPE	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	TOTAL
H. & M.B.	4	30	19	-	2	7	5	46	53	87	114	77	76	103	20	44	32	21	166	266	1172
Light Bomber	48	90	54	63	23	49	125	131	193	370	428	448	572	475	284	240	94	95	325	415	4522
SEF. Offensive	-	-	6	50	42	18	154	114	92	575	934	994	1161	683	552	334	243	257	262	271	6742
SEF. Defensive	-	-	-	-	-	35	137	17	87	114	103	561	639	575	84	106	53	257	416	688	3872
TEF. Offensive	-	-	-	-	-	-	-	-	-	-	32	28	30	56	40	63	61	138	148	128	724
Night Fighter	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	3	10	17
Tac/Recce.	-	-	-	-	-	8	170	117	111	56	136	78	136	109	32	41	84	66	186	204	1534
Photo. Recce.	-	-	-	-	-	1	23	21	30	59	57	72	72	85	54	31	62	72	137	133	909
Transport	61	136	27	68	37	54	65	38	57	67	146	100	107	108	189	286	209	182	258	261	2456
M.R.G.R.	-	-	56	46	99	83	136	142	135	130	132	136	133	110	85	106	82	43	133	84	1871
L.R.G.R.	-	-	-	-	-	-	-	-	-	-	5	8	-	1	6	8	4	3	29	33	97
G.R.F.B.	12	7	13	31	64	33	84	79	49	29	57	72	67	71	90	61	70	56	89	72	1106
Spec. Duty	-	-	1	-	-	-	-	3	-	1	3	1	3	-	2	-	2	-	9	4	29
TOTALS	125	263	176	258	267	288	899	708	807	1492	2147	2575	2996	2376	1438	1320	996	1190	2161	2569	25051

SUMMARY OF SORTIES FLOWN - U.S.A.A.F.
1 April, 1942 to 30 November, 1943

	1942									1943										
AIRCRAFT TYPE	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	TOTAL
Heavy Bomber	11	45	12	1	1	-	8	38	42	59	92	113	161	260	111	183	199	305	269	440	2350
Medium Bomr.	-	-	1	18	23	18	30	-	51	60	61	182	400	349	307	341	367	526	589	229	3552
Off. Fighter	3	3	-	-	16	15	36	42	92	114	199	209	153	206	14	240	51	40	364	785	2582
Def. Fighter	-	-	-	-	-	28	84	42	63	83	40	29	52	86	27	7	-	18	6	444	1009
Recce.	-	-	-	-	-	-	17	14	28	12	7	14	8	7	10	24	4	35	20	5	205
Misc.	-	-	-	-	-	-	-	-	-	5	7	2	-	5	7	13	43	-	-	-	82
TOTALS	14	48	13	19	40	61	175	136	276	333	406	549	774	913	476	808	664	924	1248	1903	9780

NOTE: These figures are provisional and are subject to review when the official U.S.A.A.F. statistics are available for examination. They are, however, fairly accurate and serve as a useful guide for comparison with the R.A.F. effort.

Taken from Air Ministry War Room Statistics.

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APPENDIX 5

BOMBING ANALYSIS

(Heavy Medium and Light Bombers)

MONTH	SORTIES			TONS		
	R.A.F.	U.S.A.A.F.	TOTAL	R.A.F.	U.S.A.A.F.	TOTAL
APR. 1942	52	11	63	22	13	35
MAY 1942	120	45	165	56	73	129
JUN. 1942	73	13	86	31	16	47
JUL. 1942	63	19	82	27	21	48
AUG. 1942	25	24	49	11	26	37
SEP. 1942	56	18	74	22	19	41
OCT. 1942	130	38	168	58	47	105
NOV. 1942	117	38	215	117	68	185
DEC. 1942	246	93	339	129	130	259
JAN. 1943	457	119	576	293	143	436
FEB. 1943	542	153	695	410	208	618
MAR. 1943	525	295	820	320	437	757
APR. 1943	648	561	1209	274	728	1002
MAY 1943	578	609	1187	254	881	1135
JUN. 1943	304	418	722	105	376	481
JUL. 1943	284	524	808	124	537	661
AUG. 1943	126	566	692	67	577	644
SEP. 1943	116	831	947	45	867	912
OCT. 1943	491	858	1349	380	1060	1440
NOV. 1943	681	669	1350	553	903	1456
TOTALS	5694	5902	11596	3298	7130	10428

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APPENDIX 6

AN ESTIMATE OF THE NUMBER OF SORTIES FLOWN BY THE JAPANESE AIR FORCE FROM BASES IN SIAM AND BURMA

1 April, 1942 to 30 November, 1943

MONTH	Fighter	Bomber	Misc.	Recce.	TOTAL
APR. 1942	65	119	-	-	184
MAY 1942	54	25	-	3	82
JUN. 1942	-	-	-	3	3
JUL. 1942	-	-	-	1	1
AUG. 1942	-	-	-	4	4
SEP. 1942	-	-	-	11	11
OCT. 1942	61	108	-	34	203
NOV. 1942	-	6	-	20	26
DEC. 1942	67	126	-	12	205
JAN. 1943	63	72	-	18	153
FEB. 1943	143	103	-	19	265
MAR. 1943	308	175	-	38	521
APR. 1943	308	278	-	36	622
MAY 1943	258	163	-	27	448
JUN. 1943	16	-	-	3	19
JUL. 1943	26	-	-	4	30
AUG. 1943	18	-	9	2	29
SEP 1943	41	-	9	16	66
OCT. 1943	154	62	11	40	267
NOV. 1943	240	79	21	31	371
TOTALS	1822	1316	50	322	3510

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APPENDIX 7

ENEMY LOSSES

1 April, 1942 to 30 November, 1943

CLAIMS BY THE R.A.F.

MONTH	AIR			GROUND			TOTAL		
	Des.	P.D.	Dam.	Des.	P.D.	Dam.	Des.	P.D.	Dam.
APR. 1942	44	19	30	3	2	13	47	21	43
MAY 1942	1	1	1	7	2	16	8	3	17
JUN. 1942	-	-	-	1	-	-	1	-	-
JUL. 1942	-	-	-	-	-	-	-	-	-
AUG. 1942	-	-	-	-	-	-	-	-	-
SEP. 1942	-	1	1	-	-	1	-	1	2
OCT. 1942	3	1	1	-	-	2	3	1	3
NOV. 1942	4	1	7	1	1	2	5	2	9
DEC. 1942	13	5	13	-	-	-	13	5	13
JAN. 1943	8	9	9	-	-	-	8	9	9
FEB. 1943	5	3	6	3	-	3	8	3	9
MAR. 1943	26	23	29	-	-	3	26	23	32
APR. 1943	5	11	29	-	-	1	5	11	30
MAY 1943	15	7	15	4	5	-	19	12	15
JUN. 1943	-	-	-	-	1	-	-	1	-
JUL. 1943	-	-	-	-	-	-	-	-	-
AUG. 1943	-	-	-	-	-	-	-	-	-
SEP. 1943	1	-	-	-	-	-	1	-	-
OCT. 1943	1	1	4	-	-	-	1	1	4
NOV. 1943	5	2	10	-	-	-	5	2	10
TOTALS	131	84	155	19	11	41	150	95	196

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APPENDIX 8

ALLIED CASUALTIES
(Enemy Action)

1 April, 1942 to 30 November, 1943

R.A.F.	Apr. to Dec. 1942	Jan. to Jun. 1943	Jul. to Nov. 1943	TOTALS
Liberator H.B.	-	1	1	2
Wellington M.B.	-	6	3	9
Hudson M.B.	1	1	-	2
Blenheim L.B.	22	10	1	33
Vengeance L.B.	-	-	2	2
Beaufighter TEF.	-	6	13	19
Hurricane SEF.	39	39	12	90
Mohawk SEF	5	8	1	14
Spitfire SEF.	-	-	1	1
Lysander T/R.	2	-	-	2
Hudson Trans.	2	-	-	2
Dakota Trans.	-	-	1	1
Mitchell P.R.	-	1	-	1
Mosquito P.R.	-	-	1	1
Spitfire P.R.	-	-	1	1
Hurricane P.R.	-	-	1	1
Liberator G.R.	-	-	3	3
Hudson G.R.	5	1	-	6
Beaufort G.R.	-	-	1	1
Catalina G.R.	4	2	-	6
Audax Army Co.	1	-	-	1
TOTALS R.A.F.	81	75	42	198

U.S.A.A.F.	Apr. to Dec. 1942	Jan. to Jun. 1943	Jul. to Nov. 1943	TOTALS
B-17 H.B.	1	-	-	1
B-24 H.B.	1	5	7	13
B-25 M.B.	-	1	9	10
P-38 TEF.	-	-	6	6
P-40 SEF.	3	1	-	4
P-51 SEF.	-	-	5	5
TOTALS U.S.A.A.F.	5	7	27	39

COMBINED TOTALS	86	82	69	237

In addition 13 R.A.F. aircraft were destroyed on the ground and 10 U.S.A.A.F. likewise destroyed.

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APPENDIX 9

AIR TRANSPORT SUPPORT

R.A.F.

1 April, 1942 to 30 November, 1943

MONTH	SORTIES	ABORTIVE	TONS
APR. 1942	61	-	+++
MAY 1942	136	11	129
JUN. 1942	27	2	45
JUL. 1942	68	6	130
AUG. 1942	37	9	60
SEP. 1942	54	6	75
OCT. 1942	65	5	92
NOV. 1942	38	6	55
DEC. 1942	57	9	94
JAN. 1943	67	3	168
FEB. 1943	146	11	283
MAR. 1943	100	11	175
APR. 1943	107	18	274
MAY 1943	108	17	279
JUN. 1943	189	59	386
JUL. 1943	286	38	784
AUG. 1943	209	31	520
SEP. 1943	182	28	468
OCT. 1943	258	13	772
NOV. 1943	261	-	816
TOTALS	2456	283	5605

+++ In April, 1942 and until 8 May, 1942, all air transport work was in connection with the evacuation of our forces and civilian refugees from Burma. No tonnage figure is therefore available.

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APPENDIX 10

APPROXIMATE DISTRIBUTION OF AIR SUPPLIES

R.A.F.

1 April, 1942 to 30 November, 1943

SORTIES

AREA	Apr. to Dec. 1942	Jan. to Jun. 1943	Jul. to Nov. 1943	TOTALS
BURMA@	99	-	-	99
CHIN & NAGA HILLS	108	373	849	1330
NORTH BURMA	267	95	201	563
FORT HERTZ	69	71	56	196
77 BRIGADE+	-	178	-	178
AKAKAN	-	-	90	90
TOTALS	543	717	1196	2456
Abortive sorties included in above	54	119	110	283

@ This represents the number of sorties flown during April and up to 8 May, 1942 when R.A.F. air transport aircraft were engaged in evacuating our forces and civilian refugees from Burma. No tonnage figures are therefore available covering these sorties.

+ The First Wingate Expedition

TONS

AREA	Apr. to Dec. 1942	Jan. to Jun. 1943	Jul. to Nov. 1943	TOTALS
CHINA & NAGA HILLS	144	945	2471	3560
NORTH BURMA	434	154	473	1061
FORT HERTZ	102	163	140	405
ARAKAN	-	-	276	276
77 BRIGADE	-	303	-	303
TOTALS	680	1565	3360	5605

O.R.Bs. Nos.
31 & 194 Sqdns.

TOTAL NUMBER OF AIRCRAFT IN INDIA COMMAND

R.A.F.

1 April, 1942 to 30 November, 1943

	1942								1943											
AIRCRAFT TYPE	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.
Single Engined Fighters	159	189	201	336	376	417	449	556	628	634	657	685	736	788	875	908	909	973	1187	1188
Twin Engined Fighters	-	-	-	-	-	-	-	-	10	15	27	40	53	66	85	89	107	122	153	185
Bomber types	35	107	132	171	193	273	299	334	434	550	588	753	809	817	820	814	859	904	1010	1019
Others	232	257	270	264	258	187	170	165	176	189	206	215	219	213	236	259	358	415	410	428
TOTALS	426	553	603	771	827	877	918	1055	1248	1388	1478	1693	1817	1884	2016	2070	2233	2414	2760	2820

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APPENDIX 12

AMERICAN AIRCRAFT DESIGNATION

Type	British Name	Description
B-17	Fortress	Multi-engined heavy bomber
B-24	Liberator	Multi-engined heavy bomber
B-25	Mitchell	Twin-engined medium bomber
C-46	Commando	Twin-engined transport
C-47	Dakota	Twin-engined transport
F-4	Lightning	Twin-engined photo. recce.
P-36	Mohawk	Single-engined fighter
P-38	Lightning	Twin-engined fighter
P-40	Kittyhawk	Single-engined fighter
P-51	Mustang	Single-engined fighter

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APPENDIX 13

HISTORY OF THE JAPANESE ARMY AIR FORCES IN MALAYA, SIAM AND BURMA

April 1942 - November 1943

The following narrative is intended to serve as an interim history of the Japanese Army Air Force in Burma as seen through Japanese eyes. It is based largely upon information obtained by interrogation of Japanese officers who made their statements from memory. Only the broad outline of operations can be recorded here since reference papers, such as war records, reports and appreciations are not available. Eventually it should be possible to present a more coherent picture of Japanese activities, but for the present the following pages must suffice.

1. After the first Burma campaign of 1942, our 5th Air Division concentrated its efforts on the annihilation of the British and American air forces. We had great difficulty, however, in maintaining our air strength since the Burma area was merely the supporting front for the sixteenth Army. Once mopping up operations in Burma had been completed, our disposition shifted from operational to occupational, and the enemy, both British and American, proceeded with preparations for a counter attack. In spite of the fact that the enemy air and ground forces were steadily strengthened since the end of 1942, our strength was frequently decreased. Moreover, the supply of aeroplanes and aircraft parts from the sea was hindered and it gradually became difficult for our Division to carry out operations. Nevertheless, our Division was anxious to perform its mission of annihilating the enemy.

2. Co-ordination with the ground forces was generally indirect, since our main force was always concentrating on the destruction of the enemy air force. Only a small part of the 5th Air Division directly supported the ground forces and until the autumn of 1943 expected results were obtained through this policy. The policy of our air attacks was to destroy enemy planes both in the air and on the ground. At the initial stage of the 1942 campaign, enemy air bases were located within range of our air attacks and there were timely opportunities for our combined fighter and bomber units to bomb these bases. But after the summer of 1942, the enemy air forces withdrew from Burma deep into India and South-western China. Reinforcing themselves there they gradually began to move their planes to the front lines and this made it increasingly difficult for us to carry out our operations. Through secret activities of our headquarters reconnaissance unit, we were able at times to detect enemy planes assembled at front line airfields. These were subsequently attacked by our combined fighter and bomber units.

3. In the execution of annihilating the enemy air forces we primarily endeavoured to direct our attacks against their bombers but there were times when we shifted our attacks on their fighters which hindered our activities.

4. After the supporting air operations during the Burma campaign, units of the 5th Air Division withdrew to Malaya to prepare for future operations. Plans were laid for the bombing of Calcutta immediately after the monsoon but it had to be postponed because of the difficulty of transportation and because it was necessary to co-operate with the Fifteenth Army in repulsing the British-Indian forces which were

preparing for a counter attack.

5. The British and American air forces, which had suffered a severe blow at Magwe in April 1942, re-organised themselves in Yunnan, (China) and in Eastern India. They gradually reinforced themselves, being supplied from the rear during the rainy season. Though they had not as yet mustered sufficient strength to carry out a positive counter-attack, it was understood that unless immediate counter measures were taken, subsequent operations would become difficult. Thus each unit in our Air Division, which had been trained in Malaya during the rainy season, made daring attacks, first against the American air unit in Yunnan and then against the enemy air forces in the Chittagong and Fenny areas. For these operations the 5th Air Division moved its command post from Rangoon to Meiktila. The 4th and 7th Air Brigades were ordered to attack Imphal, Fenny and Chittagong and the 12th Air Brigade was ordered to attack Yunnan. The latter was also used to intercept enemy aircraft in North Burma.

6. From October onwards, when enemy air strength increased, attacks were made on various targets in Burma especially against key points in our supply system and against our airfields. Since it was comparatively difficult to shelter or disperse our heavy bombers on airfields, they were usually stationed in Malaya or Siam which were outside the range of enemy attacks. These bombers advanced to Burma in the evenings, and after completing their missions, quickly returned to these rear areas.

7. From January onwards our air strength decreased steadily but we continued to fight for air supremacy frequently destroying enemy planes which appeared on the border line of Burma. However, the enemy gradually reinforced, becoming increasingly fierce in their attacks to cut off our supply lines. On the ground the enemy counter attacked in the Akyab area. This necessitated the greatest skill in carrying out operations so as to gain air supremacy and support the Fifteenth Army. It also necessitated a closely co-ordinated ground and air action.

8. In accordance with aforementioned tactics, our Division, in spite of its small force, engaged superior enemy numbers and continued operations without rest. Occasionally it attacked Yunnan and Kunming in China or Chittagong and Fenny in Eastern India. It also executed surprise raids in the Silchar area. Attacks were also directed against the enemy's India-China supply line which became increasingly active. We made frequent raids on Tinsukia (Dinjan), the enemy's intermediate base. Occasionally a concealed unit of our fighters at Shwebo or Myitkyina intercepted enemy transport planes and destroyed a considerable number of them.

9. Although our Air Division chiefly concentrated on air supremacy operations, we endeavoured to co-operate closely with the fifteenth Army in its ground operations. When the Indo-British army counter attacked in Arakan, our air Division, subduing the increasing enemy air forces, gained supremacy of the air above Chittagong and directly supported the front line ground units in their operations.

10. Although our Air Division's objective was to annihilate the enemy air forces, the improvements in types and efficiency of their planes made it possible for the enemy to situate their bases (presumably bomber) outside the range of our attacks. Furthermore, since the enemy strength was increased, we could not anticipate much success in the air annihilation operations any longer. Interception operations, in which we could still destroy the enemy air strength, rose greatly in strategic value.

APPENDIX 13

From October to November 1942 our Division ordered the 12th Air Brigade at Maymyo to search out and intercept enemy planes which attacked the area north of Toungoo and Magwe and the 4th Air Brigade at Toungoo to intercept enemy planes which attacked south of Toungoo and Magwe. However, the initial stage of these intercepting operations, we were unable to achieve satisfactory results due to the incapability and inadequate disposition of intelligence units. Therefore, our Division designated a fighter unit as full time air defence unit of the Rangoon key positions and also ordered fighter units on all airfields to take charge of the air defence of each respective airfield. Thus we gradually altered the location of Type A radio intercept receivers and observation sentries, and were able to detect enemy planes in time. Our anti-aircraft guns and fighter planes inflicted considerable losses to the enemy.

11. Our Division carried out the following convoy escort operations. (a) Support of the attack against Akyab in June, 1942 and also support of transportation to that area in December of that year. (b) Support of transportation between Penang and Rangoon in the rainy seasons of 1942 and 1943. In 1942 these supporting operations were carried out without much difficulty. However, in 1943, since the American air force was reinforced by B24s, we suffered considerable losses. Therefore, even during the rainy season, in order to protect our convoys, our Division posted an element of our bomber unit at Sungei Patani and at Tavoy, while the main force of our fighter units were located at Mingaladon. Thus with the close co-operation of the 3rd Shipping H.Q. our Division endeavoured to escort convoys as much as possible. However, the enemy mines laid at the mouth of the Rangoon river made transportation of supplies gradually difficult.

12. Operations were influenced greatly by the weather in the rainy season. During the rainy season of 1942, the enemy air forces did not attack us because of their small force and also due to the short range of their planes. Therefore, the main strength of our Air Division could move to Malay and train for the next operation, improve types of planes, and engage in the transportation of new planes supplied from Japan proper. However, during the rainy season of 1943, the enemy air forces were greatly improved in their efficiency, reinforced in their strength, and accordingly, they were able to attack us in spite of the rainy weather. Therefore, our Air Division had to employ all units, other than bomber units, with operational missions.

Airfields and Airfield Services

13. Our Division paid special attention to the maintenance and construction of airfields. Airfields which had been damaged by the enemy immediately following the rainy season of 1942, were gradually repaired and improved. Immediately after our army occupied Rangoon in February, 1942 (Sic) our Air Division instructed each unit, which was using the old airfield formerly constructed and used by the enemy, to disperse and conceal its planes as a precaution against enemy air raids. However, at that time, being busily occupied in maintenance and repair work, we were contented with dispersing our planes within the old rectangular airfields, or taking simple covering measures. Therefore, during the rainy season of 1942, all unit commanders under the command of our Air Division were summoned, and given instructions concerning the prevention of losses and the construction of airfields. The

gist of the instructions was as follows. (1) Each air sector unit will reconnoitre each respective area, and select and report 2 or 3 places appropriate for airfields. (2) The high land area will be reconnoitred for a suitable ground to construct a new airfield. (3) For the purpose of dispersing planes, taxying routes will be constructed as wide as possible, and forest will be utilised as much as possible. (4) If our planes on the ground are damaged reasons for such damage will be thoroughly investigated and the defects improved then and there. According to these instructions each air sector unit commenced the construction, maintenance and improvement of airfields. These works were greatly promoted because enemy air raids became increasingly fierce just at that time.

Air Planes

14. Our plane losses in combat were estimated to be as twice as many as planes damaged or destroyed on the ground. To supplement these losses, at the initial stage of the operation, the reserve planes at Saigon and Formosa were sent as reinforcements. The conversion or improvement in types of planes was made within this theatre, without much difficulty, during the rainy season. In the attack on Yunnan which was carried out before the rainy season of 1942, the heavy bomber unit of the 7th Brigade realised the ineffectiveness of our fire arms on planes. Therefore, during the rainy season (1942) the main force was despatched to Japan proper to re-equip themselves with flexible automatic cannons, and at the same time to study the anti-bullet and anti-fire equipment.

Transportation

15. In 1942, sea transportation was carried on without much hindrance from the enemy. However, in 1943 our sea transportation was frequently intercepted by enemy planes and submarines. For this reason, not even a third of the supplies required by both air and ground forces in Burma could be transported. This difficulty of sea transportation seriously affected the maintenance of our fighter power.

16. Transportation within Burma was chiefly by rail. However, as the capacity of railway transportation was gradually lessened, inland transportation was carried on by the 4th Motor Transport Company which was attached to our Air Division. The 11th Air Transport Unit was responsible for all air transportation.

Outline of the Operations of the 5th Air Division

17. After the supporting operation of the mopping up operation in Burma (1942), units of our Air Division withdrew to the Malay area, and concentrated its efforts in preparations for the next operation. The gist of preparations was as follows:-

(1) Training for the Calcutta attack

(2) Training to improve night flights

(3) Training to increase skill in air combat

(4) Improvement in armament and lengthening the range of heavy bombers

(5) Transportation of fuel and ammunition to Burma

(6) Repairing and maintenance works for the purpose of increasing available planes.

18. Though the Calcutta attack had been planned to be carried out immediately after the (1942) rainy season, we could not carry out this plan, partly because of the difficulty in transportation during the rainy season, and partly because it was necessary to co-operate with the Fifteenth Army in repulsing the Indo-British army which was expected to commence counter-attacks. Also because exhaust flame dampers on heavy bombers for night attacks had many defects.

19. Our Air Division ordered the 4th and 7th Air Brigades to attack the enemy air force in the Imphal, Chittagong and Fenny areas, and for the 12th Air Brigade to attack on the Yunnan area and also to intercept enemy planes which attacked north Burma.

20. During this period (October to December 1942), enemy air forces were gradually reinforced and small numbers of their planes frequently carried out guerilla attacks against various places in Burma, especially on transportation key points. Therefore, our Air Division ordered all bomber units to retreat to Malay and Siam in order to prevent losses caused by enemy air raids.

21. The Indo-British army gradually concentrated its strength in the Mayu Peninsula area, and indications of their counter-attack became clear. Therefore, keeping in close liaison with the Fifteenth Army our Division directed the 4th Air Brigade to support the ground forces in that area.

22. At the end of this period (December, 1942) the supply transportation of the American air forces in China; using the India-China air route; became increasingly active. Therefore we carried out a daring attack against Tinsukia (Din Jan) and achieved much success. In December as the situation in the South West islands area became urgent the 12th Air Brigade and the 14th Air Regiment were transferred there.

23. At the end of 1942 the enemy's intention to counter-attack Burma became clear and it was expected that the enemy would attack the Mu River area or the Mayu Peninsula area. Therefore, our air and ground forces in Burma improved our defensive disposition and concentrated on preparations for coming operations. At the beginning of 1943 the Indo-British force, again counter-attacked on the Mayu Peninsula area where they had failed in their counter-attack before at the end of the year (Dec. 1942). The Fifteenth Army commenced its operations in February to repel this attack, mopped up the Mayu Peninsula and drove the enemy far towards Chittagong.

24. The main purpose of enemy air attacks was to cut off our supply line while an element of them attacked our key positions in the Rangoon area and our airfields. In accordance with this situation our Air Division carried on operations aiming to annihilate enemy air forces in the Burma border line area and also to co-operate closely with the Fifteenth Army.

25. During this period (Jan. to May, 1943) we altered our operation tactics of the former period when we had concentrated on short distance attacks against enemy airfields in the border line area from the beginning to the end. Our new plan was to engage the enemy in the hinterland, making the utmost use of our attacking range. In April and May, 1943 we attacked Kunming twice in order to reduce the

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enemy strength there. As for the enemy's air bases a short distance away, we attacked Tinsukia (Din Jan); the enemy's intermediate base on the India-China air line; in February and March 1943 and destroyed 25 or 26 enemy planes. We also successively attacked the Fenny, Silchar, Batalhure? (Sic), Cox's Bazaar, Dohazari airfields and delivered considerable damage every time.

26. Since the end of December, 1942 the 4th Air Brigade successfully co-operated with the 55th Division in the Akyab area. Also in February, when the Fifteenth Army commenced counter-attack operation in the Mayu area, our Air Division, utilising the spare hours between air annihilation operations, closely supported the 55th Division on the ground. The 4th Air Brigade attacked the area south of Chittagong and the 7th Air Brigade the Chittagong area.

27. As the enemy air force was strengthened, the frequency of their attacks against Burma steadily increased, and our political key positions and transportation were given high priority. Together with the intensification of their attacks on these key positions (Rangoon, Maymyo, Akyab, Chauk), their attacks against our air bases in the Rangoon, Toungoo and Meiktila areas became increasingly frequent. However, our Air Division whose air strength was very small in general, confronted enemy air attacks depending chiefly upon anti-aircraft fire arms on the ground. No full service air defence units were established other than a fighter unit which took charge of the air defence of Rangoon and airfields nearby. Other important airfields were guarded by the fighter units situated in each respective airfield and also by the A.A. fire arms possessed by each respective airfield battalion.

28. At the end of May, 1943, as soon as the rainy season began, our Division sent our units to the rear in order to replace their strength which had been badly consumed by the successive operations during the dry season, and also to resume the balance of dispositions which was broken due to the transfer of the 12th Air Brigade to the South Eastern area. Thus our Division shifted to the rainy season dispositions to prepare for the coming operations in the next dry season. However, attacks by enemy planes became increasingly persistent. Therefore, our fighter units were charged with the protection of sea transportation and the air defence of Rangoon.

SECRET

APPENDIX 14

THE JAPANESE ARMY AIR FORCE

ORDER OF BATTLE

MONSOON PERIOD - 1942

H.Q. 5th AIR DIVISION, RANGOON

H.Q. 4th Air Brigade, Toungoo

50th Air Regiment	Singapore	Fighter
8th Air Regiment	Toungoo	Recce.
	Moulmein	Bomber

H.Q. 7th Air Brigade, Sungei Patani

12th Air Regiment	Alor Star	Bomber
98th Air Regiment	Sungei Patani	Bomber
*64th Air Regiment	Mingaladon	Fighter

H.Q. 12th Air Brigade, Singapore

1st Air Regiment	Singapore	Fighter
11th Air Regiment	Singapore	Fighter
81st Air Regiment	Leku	Recce.

* Controlled directly by 5th Air Division during the monsoon period.

Bomber and fighter air regiments comprised about 25 aircraft and reconnaissance air regiments about 15.

THE JAPANESE ARMY AIR FORCE

ORDER OF BATTLE

DRY SEASON OF 1942-1943

H.Q. 5TH AIR DIVISION, RANGOON
(Forward Echelon at Meiktila)

H.Q. 4th Air Brigade, Meiktila

50th Air Regiment	Meiktila	Fighter
8th Air Regiment	Heho	Bomber
14th Air Regiment	Sungei Patani	?

H.Q. 7th Air Brigade, Toungoo

12th Air Regiment	Alor Star	Bomber
64th Air Regiment	Toungoo	Fighter
98th Air Regiment	Sungei Patani	Bomber

H.Q. 12th Air Brigade, Maymyo

1st Air Regiment	Maymyo	Fighter
11th Air Regiment	Maymyo	Fighter

81st Air Regiment, Leku	Det. Meiktila	Recce.

The 12th Air Brigade and 14th Air Regiment were transferred to the South West Pacific in December, 1942.

THE JAPANESE ARMY AIR FORCE

ORDER OF BATTLE

MONSOON PERIOD - 1943

3RD AIR ARMY

H.Q. 5TH AIR DIVISION, RANGOON

* H.Q. 4th Air Brigade, Toungoo

8th Air Regiment	Toungoo	Bomber
50th Air Regiment	Mingaladon	Fighter

H.Q. 7th Air Brigade, Sungei Patani

12th Air Regiment	Medang	Bomber
64th Air Regiment	Mingaladon	Fighter
98th Air Regiment	Penang?	Bomber

81st Air Regiment, Hlegu — Recce.

* Though these units are shown as located in Burma, all their bomber aircraft were detached to Malaya for rest and training.

The 3rd Air Army was formed in June, 1943 to control all air operations in Burma and Siam. Facilities were, however, made for training in French Indo-China and Malaya, hence the location of certain units in those countries.

APPENDIX 14

THE JAPANESE ARMY AIR FORCE

ORDER OF BATTLE

POST MONSOON - 1943

3RD AIR ARMY

H.Q. 5TH AIR DIVISION, RANGOON
(Forward Echelon at Meiktila)

4th Air Brigade
7th Air Brigade

21st Air Regiment	Mingaladon	Fighter
33rd Air Regiment	Burma!	Fighter
50th Air Regiment	Meiktila	Fighter
64th Air Regiment	Mingaladon	Fighter
204th Air Regiment	Burma!	Fighter
8th Air Regiment	Heho	L.B.
12th Air Regiment	Alor Star	H.B.
34th Air Regiment	Loilem	L.B.
98th Air Regiment	Hlegu	H.B.
81st Air Regiment	Hlegu	Recce.

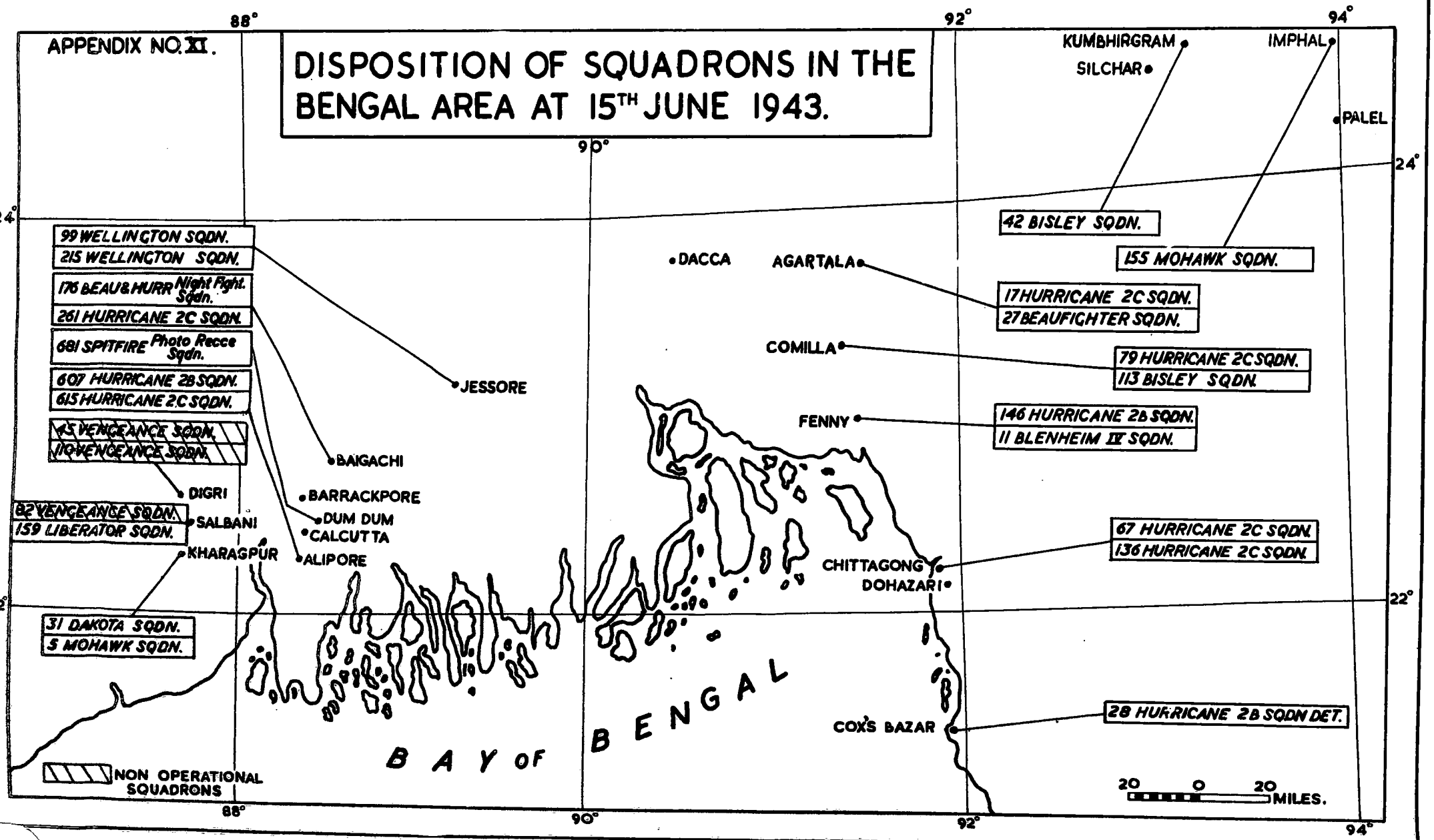
The distribution of units under the 4th and 7th Air Brigades is not known.

The 33rd and 204th Air Regiments (F) arrived in Burma in October and November 1943 respectively.

DS 86864/1(206)/6180 30 1/49 R

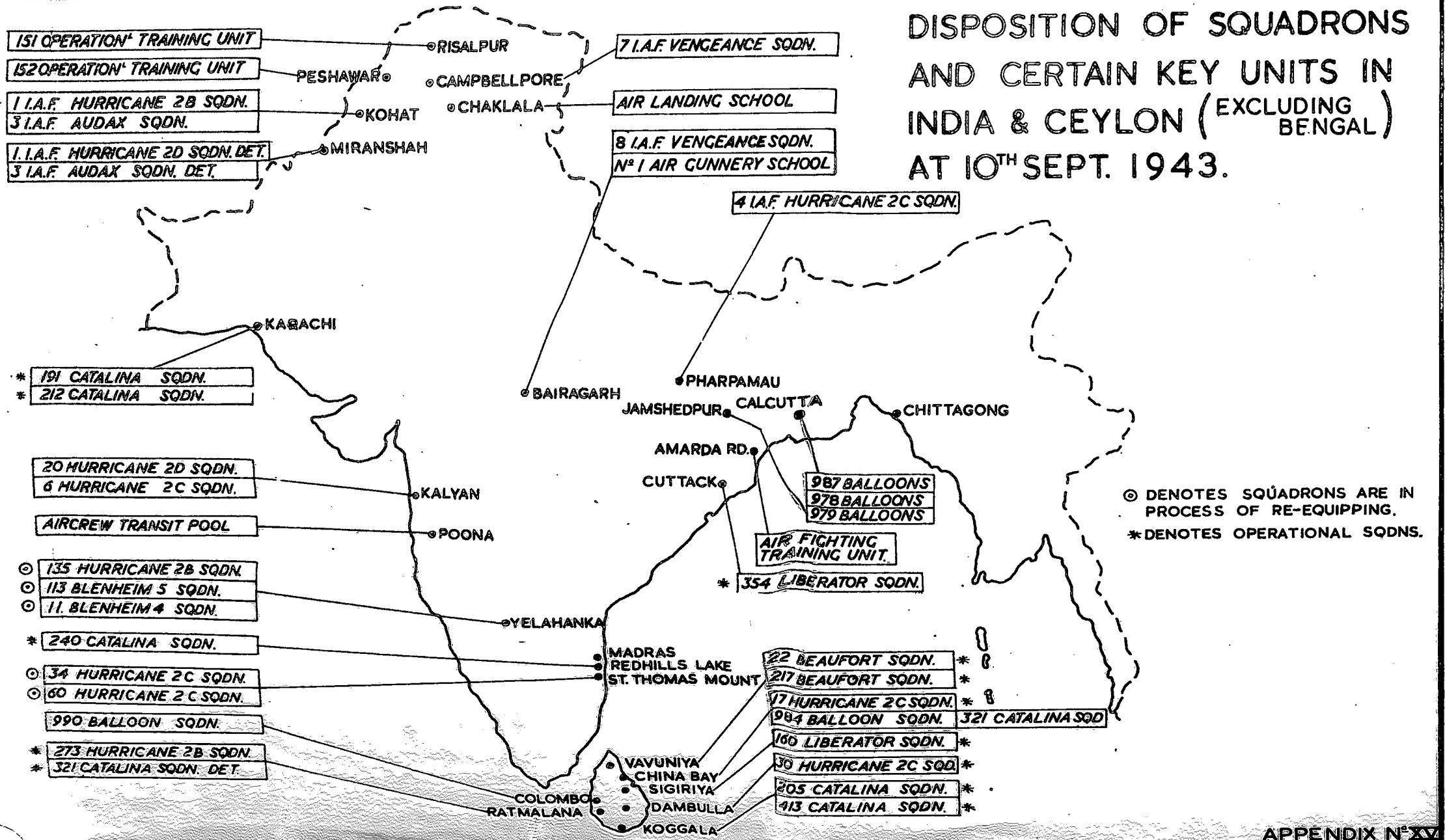
APPENDIX NO. XI.

DISPOSITION OF SQUADRONS IN THE BENGAL AREA AT 15TH JUNE 1943.



A.H.Q.I. MAP No. 264

DISPOSITION OF SQUADRONS AND CERTAIN KEY UNITS IN INDIA & CEYLON (EXCLUDING BENGAL) AT 10TH SEPT. 1943.

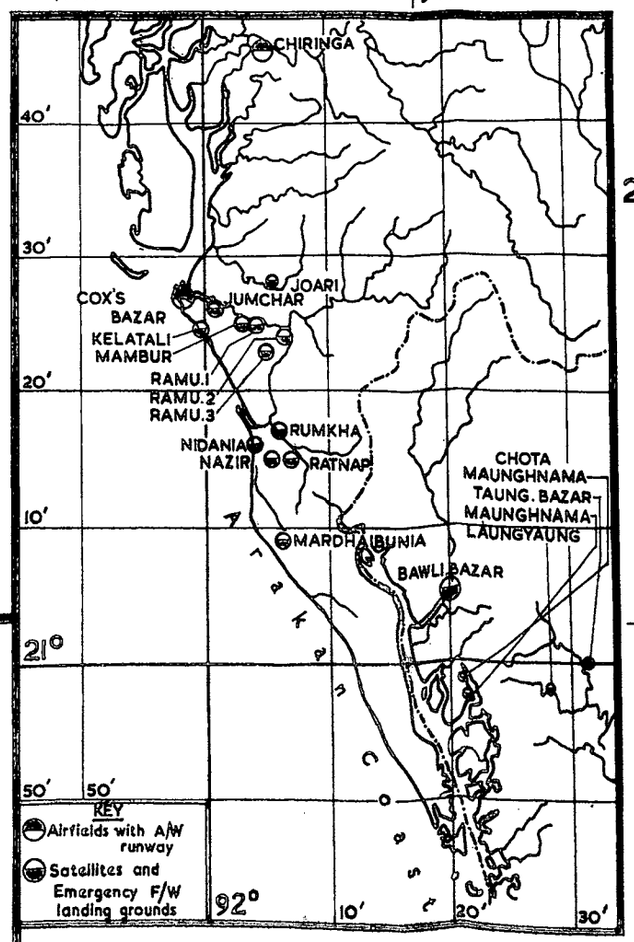


APPENDIX Nº XV

AIRFIELDS IN EASTERN INDIA JAN-1944

MANER
BIHTA
BIKRAM
Ganges R.
PANCHANPUR
GAYA
NAWADIH
SHIBGANJ
LALMANIR.HAT
LANKA
MANIPUR.ROAD
SYLHET
SYIHET WEST
CHUNAFUGHAT
PATHARKANDI
PATHARKANDI
KULAURA
RAJYESWARPUR
TILAGAON
SRIMANGAL
KUMBHIRGRAM
TULIHAL
SILCHAR WEST
HAILAKANDI
KANGPOKPI
KANGLA
IMPHAL
BISHENPUR
SAPAM
PALEL
TAMU
BHAMO
PANDAVESWAR
RASUANA
MADHAIGANJ
BOLPUR
RAMPURHAT
KURMITOLA
SINGARBIL
AGARTALA
TEZGAON
ASANSOL
CHARRA
MEJIA
ONDAL
PANAGARH
GUSKHARA
DHUBALIA
KRISHNAGAR
JESSORE
CHAKDAHA
NABHARAN
KANCHRAPARA
BAIGACHI
BARRACKPORE
BARASAT
DUM DUM
DIRTY DICK
ANGEL
ALIPORE
BANSRA
ANTELOPE
CHANDINA
COMILLA
LALMA
BHATPARA
LAKSAM
PARASHURAM
PATHANGAR
FAZILPUR
FENNY
Padma R.
RANCHI
TAMNA
PIARDOBA
BISHNUPUR
JAMSHEDPUR
DIGRI
DEGANGA
SALBANI
CALCUTTA
DALBHUMGARH
MIDNAPOR
CHAKULIA
RAIRANGPUR
KAYANPUR
DUDAKUNDI
GOLUKPUR
KHARAGPUR
BENAPUR
KALAIKUNDA
AMARDA.ROAD
JUNBALDA
Hooghly R.
SUNDERBANS
DOUBLE MOORINGS
CHITTAGONG
DOHAZARI
CHIRINGA
COX'S BAZAR
MARDHAIBUNIA
CHOTA MAUNGHNAMA
SEE INSET
AKYAB
SHEWBO
MONYWA
MANDALAY
PAKOKKU
MYINGYAN
THAZI
MAGWE
Irrawaddy R.
PROME
TOUNGOO
HENZADA
PEGU
BASSEIN
RANGOON
JHARSUGUDA
CUTTACK
KAPILAS ROAD
Mahanadi R.
BHUBANESWAR
JATNI

26° 24° 22° 20° 18°
88° 90° 92° 94° 96° 98°
86°



KEY

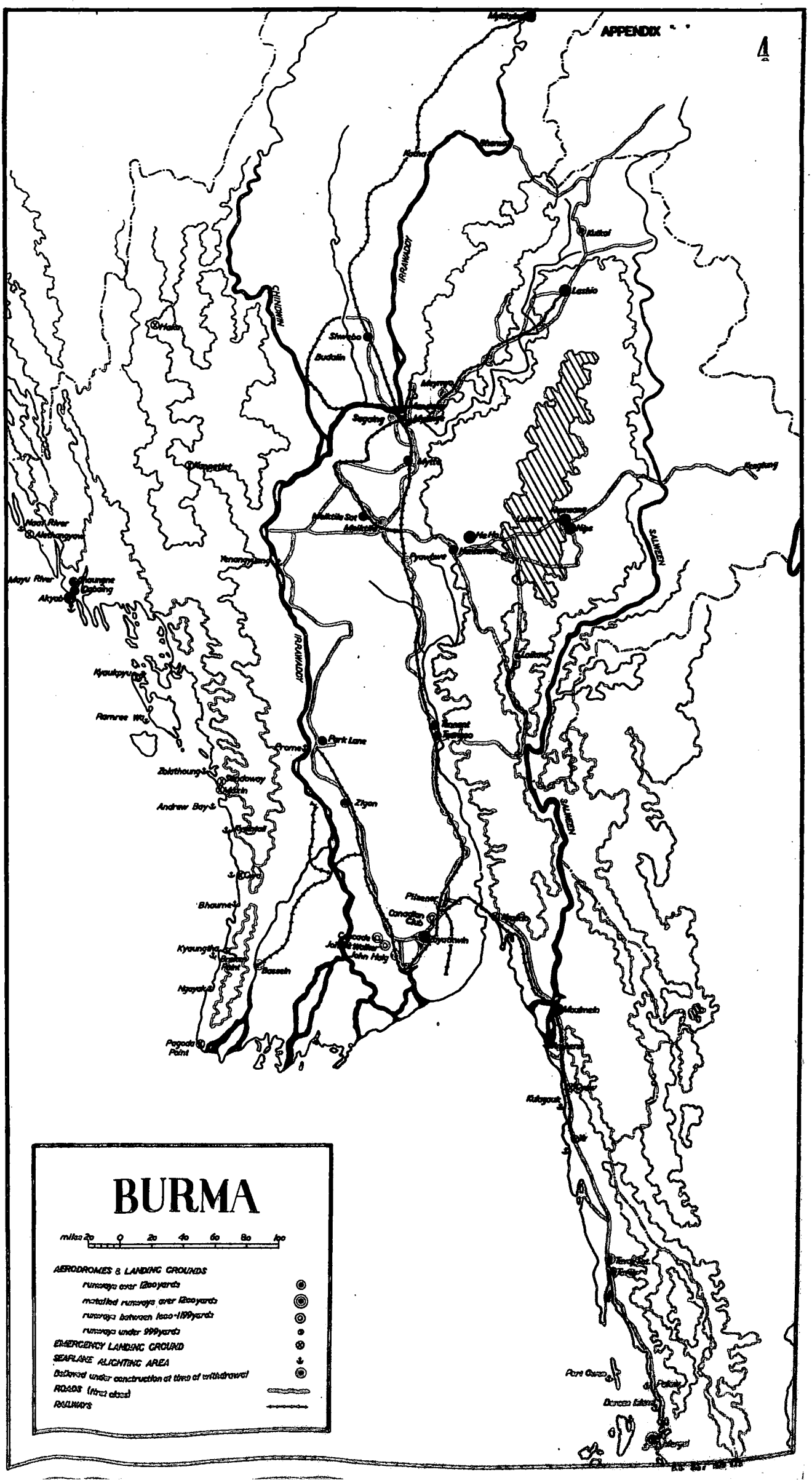
- ● Airfields with 2. or more A/W runways
- ◐ Airfields with 1. A/W runway
- ○ Airfields under construction
- ○ Airfields Satellites Army and other landing grounds with F/W strips
- ◒ Flying Boat Bases

NAWADIH U.S.A.A.F Airfields underlined

~~BOLPUR~~ Airfields abandoned

Railways Rivers Boundaries

A.M.D.I. MAP. 262



BURMA

miles 20 0 20 40 60 80 100

AERODROMES & LANDING GROUNDS
- runways over 1200 yards
- metalled runways over 1200 yards
- runways between 1000-1199 yards
- runways under 999 yards

EMERGENCY LANDING GROUND

SEAPLANE ALIGHTING AREA

Defences under construction at time of withdrawal

ROADS (first class)

RAILWAYS

SOUTH EAST ASIA

AFGHANISTAN
IRAN
TIBET
CHINA
NEPAL
BHUTAN
INDIA
ARABIA
BURMA
SIAM
FRENCH INDO-CHINA
ARABIAN SEA
BAY OF BENGAL
SOUTH CHINA SEA
INDIAN OCEAN
JAVA SEA
PERSIAN GULF
GULF OF OMAN
LACCADIVE ISLANDS
MALDIVE ISLANDS
ANDAMAN ISLANDS
NICOBAR ISLANDS
CHAGOS ARCHIPELAGO
CEYLON
MALAY PENINSULA
SUMATRA
BORNEO
JAVA

KABUL, PESHAWAR, RAWALPINDI, LAHORE, QUETTA, AMBALA, DELHI, EVEREST, SADIYA, CHUNGKING, OKWEIYANG, PAOSHAN, KUNMING, MYITKYINA, IMPHAL, BASRA, JODHPUR, ACRA, CAWNPORE, ALLAHABAD, BENARES, GWADAR, KARACHI, RANCHI, COMILLA, CALCUTTA, LASHIO, MONYWA, MANDALAY, CHITTAGONG, HONG KONG, MATRAH, BARODA, BHOPAL, AKYAB, CUTTACK, RAMREE IS., CHIENGMAI, BOMBAY, POONA, HYDERABAD, VIZAGAPATAM, COCANADA, RANGOON, SOCOTRA, BANGALORE, MADRAS, TAVOY, BANGKOK, MERQUI, PORT BLAIR, SAIGON, TRICHINOPOLY, COCHIN, TRINCOMALEE, CAR NICOBAR, COLOMBO, CALLE, SABANG, MEDAN, KUALA LUMPUR, SINGAPORE, PADAN, PALEMBANG, MALE, ADDU ATOLL, EQUATOR, DIEGO GARCIA

Tropic of Cancer

50° 60° 70° 80° 90° 100° 110°
30° 20° 10° 0° 10° 20°

THE BRITISH ISLES.
on the same scale.

STATUE MILES
30 20 10 0 400 800

A.M.B.I. MAP No. 341

JAPANESE EXPANSION

1868 TO NOVEMBER 1941 AND 7 DECEMBER 1941 TO 31 JULY 1942

LEGEND

- JAPANESE PERIMETER IN THE YEAR 1868 AND AFTER SURRENDER
- JAPANESE PERIMETER AT SUCCESSIVE DATES
- JAPANESE PERIMETER AS OF NOVEMBER 1941
- JAPANESE PERIMETER AS OF JULY 1942
- PLANNED JAPANESE PERIMETER
- JAPANESE ADVANCE OR STRIKE
- PRINCIPAL POINTS OCCUPIED BY THE JAPANESE
- ENGAGEMENTS OF JAPANESE AND ALLIED FORCES
- ALLIED BASES

SOVIET UNION · MONGOLIA · MANCHURIA 1931/2 · JEHOL 1933 · CHINA · BURMA · THAILAND · FRENCH INDO CHINA · MALAYA · SUMATRA · JAVA · BORNEO · CELEBES · PHILIPPINE ISLANDS · NETHERLANDS EAST INDIES · AUSTRALIA · NEW GUINEA · BISMARCK ARCHIPELAGO · SOLOMON ISLANDS · CAROLINE ISLANDS · MARIANAS ISLANDS · MARSHALL ISLANDS · GILBERT ISLANDS · ELLICE ISLANDS · PHOENIX ISLANDS · FIJI ISLANDS · NEW HEBRIDES ISLANDS · HAWAIIAN ISLANDS · ALEUTIAN ISLANDS

SEA OF OKHOTSK · BERING SEA · SEA OF JAPAN · EAST CHINA SEA · SOUTH CHINA SEA · SULU SEA · CELEBES SEA · BANDA SEA · TIMOR SEA · CORAL SEA · PACIFIC OCEAN

JAPAN 1868 AND AFTER SURRENDER

JAPANESE PERIMETER NOVEMBER 1941

PLANNED JAPANESE PERIMETER

JAPANESE PERIMETER JULY 1942

DOOLITTLE RAID ON JAPAN 18 APRIL 1942

JAPANESE DEFENSIVE PERIMETER JULY 1942

Printed by Photographic & Reproductions Branch, Air Ministry, London, S.W.1.

ARBI MAP No. 840