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AUSTRALIAN ARMY JOURNAL

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AUSTRALIAN ARMY JOURNAL

A periodical review of military literature

No. 228, MAY 1968

Contents

Men of the 3rd Battalion, Royal Australian Regiment boarding U.S. Army Iroquois helicopters in March this year at the Task Force base at Nui Dat in South Vietnam for movement south to the Long Hai Hills and Operation 'Pinnaroo'.

The Army, its Men and its Flying Machines

Lieutenant-Colonel A. Argent,
Royal Australian Infantry

> **The judge . . . when it was alleged that the prisoner could fly, remarked that there was no law against flying.**
> *(Trial of Jane Wenham, witch, 1721).*

FOR those days and for this part of the world, it was only a short time after Orville Wright's first powered flight at Kitty Hawk, North Carolina on 17 December 1903 that there was agitation for the Government to do something about aeroplanes in Australia. One man who tried to arouse public and Government interest in aviation was George Augustine Taylor. Taylor was an enthusiastic and unusually talented man with wide and varied interests. He was a journalist, an author and the proprietor of a number of periodicals; a radio engineer and the founder of the Wireless Institute of Australia; an artist who contributed to the Sydney *Bulletin, The Worker, The Sunday Times* and London *Punch*. He wrote on astronomy and became a Fellow of the Royal Astronomical Society; his interests extended to town planning and he also wrote on that subject. He was a member of the Royal Geographic Society, a member of the Council of the United Services Institute of NSW (1924) and, in addition to all this, found time to publish two volumes of popular verse. He was a friend of Lawrence Hargrave and photographed many of his gliders and kites — these machines are better known to some of us today since the introduction of decimal currency — and no doubt it was from Hargrave that Taylor became interested in aeronautics.

Taylor and the Aerial League of Australia

In 1909 Taylor, then aged 37, formed the Aerial League of Australia. One of the honorary secretaries of this organization was an

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Lieutenant-Colonel Argent enlisted in the A.I.F. in 1945. In 1948 he graduated from the Royal Military College and was allotted to Infantry. After service in Japan and Korea with 3 RAR he completed a Flying Instructors Course in the U.K. This was followed by service with BAOR Germany. From 1958 to 1962 he held flying appointments in Australia and qualified at the Australian Staff College. Service with 2 RAR and 3 RAR in Australia, Malaya and Borneo followed, then a staff appointment in AHQ Canberra. Presently he is attached to AAS Washington as Exchange Officer (Flying). He has previously contributed to the AAJ.

architect and a citizen force gunner, Major Charles Rosenthal[1], who was soon to have a brilliant career in the AIF.

Taylor was also building a glider which he was to fly himself. In this venture he was backed by the United Service Institute of NSW and his experiments (and those on wireless) were to be under the aegis of the Army. To regularize this state of affairs, Military Order 29/1910 was issued in which Taylor was listed as Honorary Lieutenant Australian Intelligence Corps (NSW District) dated 20 December, 1909.

The glider worked even though its pilot was not yet blessed with the authority of the Military Order, for on 5 December 1909 Taylor flew the machine into a brisk wind 258 yards from a sandhill at Narrabeen Beach, a few miles north of Sydney. The glider weighed 102 pounds and was 28 feet long. (Nowadays single seat gliders weigh about 400 pounds).

Taylor continued serving in the Citizen Forces and maintained his interest in aviation. The Commonwealth Military Journal of November 1911 reprinted his lecture to the USI of NSW. This lecture was 'The Air Age and its Military Significance' and it is interesting to note that of the nine articles in this edition of the journal three were on aviation.

Captain G. A. Taylor, Australian Intelligence Corps
Photograph: *Mitchell Library*

In 1912, having held honorary rank for three years, he was promoted to lieutenant and shortly afterwards to captain. When the 1914-18 War began Taylor was in Canada and he asked 2nd Military District (today's Eastern Command) if he could enlist in the Canadian forces. The Australian authorities however ordered him to return

[1] Maj.-Gen Sir Charles Rosenthal KCB CMG DSO VD. Born 12 Feb 1875. Commissioned into AGA 1 Jan 1903. Commanded 3rd Aust Arty Bde (equivalent to a field regiment) at Gallipoli 1915. CRA 4th Div AIF 1916. Comd 9th Inf Bde AIF 1917. GOC 2 Div AIF 1918. GOC 2 Div AMF 1921-26 and 1932-37. Died 11 May 1954.

home and for three months he conducted map reading and map making classes at the Liverpool and Menangle Camps. Taylor was medically unfit for service in the AIF. He was transferred to the R of O in 1921.

In 1925 he incurred the displeasure of the Military Board by corresponding direct with the Air Council of the U.K. However, he got what he wanted during his visit to England and other countries and wrote a 60-page report on developments in military aviation and wireless in America, Europe and Asia. The letters between AHQ, 2nd District Base, the Australian Air Board and Australia House (Taylor kept copies) so full of 'I am directed by', 'with reference to', 'will institute enquiries', etc., may have been important then, but against a backdrop of 40 years they seem very petty and as unreal as something from *Alice in Wonderland*. Three years later Taylor drowned as a result of an accident in his home in Sydney on 20 January 1928, at the age of fifty-five.

A Battler From Brisbane

When Taylor formed the Aerial League of Australia in 1909 the honorary secretary of the Queensland Branch was Charles Lindsay Campbell. On 12 October 1910 the Brisbane *Courier* published a letter from Campbell called 'Admiral Henderson and Aviation'. Admiral Sir Reginald Henderson had been saying and writing that aircraft would not be effective in war. With remarkable prescience Campbell wrote that aircraft at a few hundred feet could, with certainty, drop a most dangerous explosive down the 30-foot diameter smoke stack of one of the modern 'Dreadnoughts'. In 1910 there were, of course, no aircraft capable of such, although experiments along these lines had begun that year in the U.S. Indeed, Campbell's letter is all the more remarkable in its foresight because he was basing all his arguments on theory alone. It was not as though flight was common in Australia; the first powered, controlled flight took place only six months before this letter.[2] In his letter Campbell also recommended that military aviation in Australia should be developed by sending about 24 men to flying schools in the UK and Europe for training. On their return to Australia they would be 'redistributed among the Commonwealth' to teach piloting and to lecture.

Not content with merely writing letters to the newspapers, Campbell submitted a plan for military aviation to the Minister of Defence (Senator George Pearce) on 9 January 1911. In outline Campbell's proposal was:

- The establishment of a Commonwealth School of Aviation and an Australian Aviation Corps.

[2] At Diggers Rest 16 miles north-west of Melbourne on 18 March ,1910 by Harry Houdini in a French aircraft — a Voison. Houdini is probably better remembered these days for his ability to get out of handcuffs and locked cabin trunks whilst under water, and other similar feats.

- The School to consist of three sections. The first section was to be open to anyone of the general public who was interested in aviation. The expenses of this section were to be defrayed by repayment. The second section would be devoted to practical work and the third section would train men who, after passing examinations and practical tests, would become members of the Aviation Corps.
- Aircraft would be four Bleriot machines and two gliders.
- The School Staff would be a Controller, a pilot and two mechanics.
- The organization to be run by the Defence Department.

The Minister sent the proposal to the Military Board for its comments and the Board replied quickly, albeit cautiously, eight days later. They recommended that before anything be done the views of the War Office should be sought. Accordingly, on 23 January 1911, a cable was sent to the High Commissioner in London which read, 'Newspapers here agitating formation of Aviation Corps. Can War Office give advice'?

This signal was handled by Major P. N. Buckley RAE who was on duty in London. He replied that an offer had been made by a dirigible firm to demonstrate one of their machines in Australia providing satisfactory financial arrangements could be made. It was decided to defer action on this because the Minister of Defence was going to London shortly for the 1911 Imperial Conference and he would look into military aviation himself. However, in the meantime, the Army encouraged officers to fly and Major C. H. Foott[3], RAE was instructed to attend a number of lectures given by Hargrave in Sydney and to represent the Military Board at demonstrations of powered flights.

'Officers Are Encouraged to Fly'

Officers took advantage of being encouraged to fly. For example the Commandant Commonwealth Military Forces of NSW (Brigadier-General J. M. Gordon), in a Bristol Boxkite in 1911 was flown 3000 feet over Sydney Harbour, and the Commonwealth Military journal of August 1911 contains this reference: 'Memorandum by Captain J. W. Niesigh (RL CMF) Based Upon Personal Observation During a Flight from Ascot (Botany) to the Military Manoeuvre Area at Liverpool NSW in Bristol No. 10 Bi-Plane on 3 May 1911 (Mr. Joseph J. Hammond, Pilot Aviator), Together with Notes on the Relative Qualities of Bi-Planes and Monoplanes'.

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[3] Brig C. H. Foott, CB CMG. Born 16 Jan 1876. Queensland Permanent Artillery 1896, Engineers 1901, Director of Engineers 1909-11, AIF 1914-1919 (AA and QMG 1 Aust Div CE 1 Aust Corps) GOC 4 Div AMF 1929-31 RL 20.2.36. Died 27 June, 1942.

In 1912 Rosenthal was a passenger in a home-made machine something similar to a Boxkite when the aircraft was forced to land because of bad weather. The only suitable area for this controlled crash was on a railway line near Mount Druitt, NSW. As luck would have it a train was on the line at this very moment and an accident was only averted by the aircraft's wing striking a signal post which swung the machine clear of the oncoming express. The pilot's mother was a passenger in the train but whether the shaken Rosenthal thought that the pilot's action was taking the Oedipus complex too far is not recorded.

Major Foott attended flying demonstrations at Altona, near Melbourne, in February 1911. The machine used was a Farman-type, Gnome-engined biplane. Foott was impressed and in his report to the Military Board recommended that an Aviation Corps be formed with eight officers, ten mechanics and four flying machines. The Board stuck to its guns however and adhered to its decision to wait until the Minister returned from the Imperial Conference.

While overseas Senator Pearce, who was convinced that war with Germany was inevitable, went to Brooklands, the home of early English aviation, and he wrote, 'What I saw that day and the talks I had with the flying men convinced me of the wisdom of our having a flying school in the Defence Department'.

There was some movement after Pearce returned to Australia. On Saturday 30 December 1911 an advertisement appeared in the Commonwealth of Australia Gazette headed 'Appointment of Two Competent Mechanists and Aviators'. Salary was given as £400 per annum, inclusive of all allowances except travelling. Successful candidates were to be on twelve months' probation and their appointments could be confirmed if their services had been satisfactory. Another paragraph read, 'The Commonwealth Government will accept no liability for accidents'. The advertisement was also published in England.

Campbell Qualifies

This advertisement and statements by the Minister of Defence spurred Campbell to going to England early in 1912 to gain his pilot's brevet. He trained on Salisbury Plain with the British and Colonial Flying School at his own expense. On 19 May 1912, when he had just turned 49 years of age, his qualifying flight was duly witnessed by two gunner officers and he won his coveted brevet. (Royal Aero Club Certififace 220). Three months later, in England, he was killed when his Bristol Monoplane crashed from an altitude of 300 feet.

Campbell never served in the Army or Navy but it is no exaggeration to say that what interest there was in Military aviation

and what the Government had done by the time the Great War started — were due mainly to his efforts and those of Taylor. Campbell was an enthusiast with staying power. As early as 1893 he had worked on Hargrave's kites. He was an indefatigable letter writer and practically bombarded the Minister of Defence, the Prime Minister and the High Commissioner in London of the day, with correspondence, sometimes typewritten, but mainly in his own strong hand. As soon as he was qualified he cabled Australia applying for the position of 'Competent mechanist and aviator' and offered his services in anything connected with aviation. Officialdom replied that his application would be considered in due course. He further asked if some of his expenses could be met by the Commonwealth but this request, not unnaturally in the circumstances, was refused. However, Campbell thanked the High Commissioner for his financial and other support so it would appear that the High Commissioner exerted some influence with the aviation schools.

During mid-1912, after Campbell had qualified for his brevet, the War Office recommended two aviators in answer to the Department of Defence advertisement. These men were Busteed, an Australian engaged in flying in England, and an Englishman named Petre. The Military Board rubber-stamped the War Office recommendation and on 16 July 1912 the Secretary of the Department of Defence wrote to Campbell in England regretting that his application was not successful. Campbell was dead before the letter arrived in London.

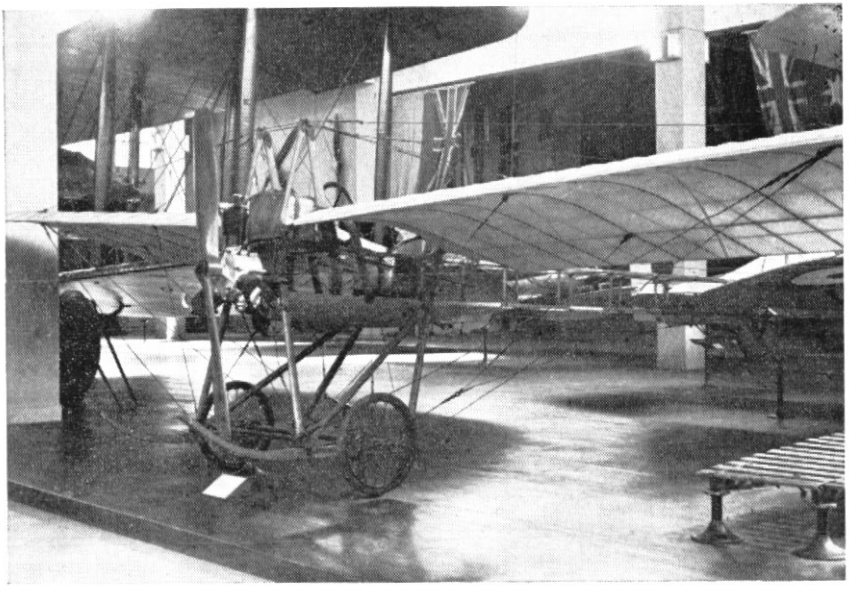
At the time of Campbell's death it was widely rumored that he had been selected to head the Australian Army Aviation Corps. This could have been so although nobody in authority, such as the Minister of Defence or the CGS at the time, appear to have committed themselves to paper on this point.

Two Competent Mechanists and Aviators

As mentioned, Busteed and Petre were the two men chosen to launch aviation in the Defence Department. However, late in 1912 Busteed changed his mind and declined the position and another Australian, then flying in England and the Continent, Eric Harrison, was chosen in his place. Harrison, from Castlemaine in Victoria, had learnt to fly at the Bristol School on Salisbury Plain. Afterwards Bristol's employed him to run the Halberstadt Flying School in Germany where he trained young Germans who, a few years later, were making names for themselves fighting the Allies on the Western Front.

Petre was also employed by Bristol's when he was selected to come to Australia. He had learnt to fly in 1911 at Brooklands and

had been Chief Instructor at the Deperdussin School. He arrived in Australia with two mechanics early in 1913. He was then aged 29. Harrison, who was a couple of years younger than Petre, arrived with two more mechanics in Melbourne in June 1913. M.O. 234/1913 and 385/1913 posted Petre and Harrison to the Aviation Instructional Staff as Honorary Lieutenants with effect from 6 August 1912 and 16 September 1912 respectively. The four mechanics — R. H. Chester, A. E. Shortland[4], G. A. Fonteneau and C. V. Heath — were posted to the Aviation Instructional Staff early in 1913. Their pay was £200 per year.



The Australian Army bought two of these Deperdussin flying machines. One was crashed at Point Cook early in 1914 and the second never flew but was used for taxi-ing practice. This type of aircraft had no ailerons. Lateral control was by wing warping. Details: loaded weight 500 lb, 35 horsepower 3 cylinder Anzani engine, maximum speed 40 mph, span 21 ft 9 in, length 19 ft 9 in. Photograph: *Australian War Memorial*

A Letter From London

Acute readers will observe that the Australian Army was building on sand. Here they were about to raise a new military unit, admittedly only a small one, and form a new Corps, yet the men upon

[4] Shorland remained in Australian aviation. He retired from the Department of Civil Aviation in April, 1956, after being an aircraft surveyor and airport manager, Essendon. During the 1914-18 war he served in New Guinea and Mesopotamia and was in the RAAF 1921-1929. He died in 1965.

whom they were relying to do this had no military training and no military knowledge! The British Army had based the raising of the RFC on qualified, experienced Military (and in some cases Naval) officers. Indeed their DMT (Brig. D. Henderson) qualified for his brevet at the age of 47.

The Australian Army liaison officer at the War Office, Lt.-Col. J. G. Legge (later GOC 1 Div AIF, GOC 2 Div AIF, CGS 1914-15, 1917-20) in a letter from London on 1 November 1912 pointed out the inherent weaknesses of the scheme. He noted that the only persons with expert knowledge of aviation were the two pilots, neither of whom had any knowledge of military discipline and organization; that 'a mere flying certificate is of no more value for war than is a riding certificate . . . for the creation of an efficient cavalry soldier'. He went on to say that flying being a dangerous occupation '. . . there must be that very high degree of mutual confidence obtained from strict discipline'.

Legge then urged that an experienced and competent officer be appointed to command the flying school in Australia and that mechanics should be trained in England or instructor-mechanics be brought out to Australia.

The Board replied to Legge that the aviators selected should be able to teach flying and that military instruction must come later. This reply skirted around Legge's main point that military flying and discipline go together — not one before the other.

The problem has barely been faced up to even today.

In the event mechanics, as we have seen, were selected in England and the Great War temporarily solved some of the problems of leadership.

A Site For The Flying School

Meanwhile some preparatory work was being done in Australia. It was necessary to find a suitable place for a flying school and for the initial reconnaissances the Army chose a particularly fine Citizen Force Officer, Captain Walter Oswald Watt[5], who held a commission in the NSW Scottish Rifles. In 1911, at the age of 33, he had learnt

[5] After leaving Australia, Watt flew in Egypt and France and was in France when the Great War began. Because he believed Great Britain would remain neutral he enlisted as a pilot in the Military Aviation Section of the Foreign Legion. In February 1916, after 18 months of active service flying in France, he was awarded the Legion d'Honneur and the Croix de Guerre and was granted the brevet rank of captain in the French Army. Watt transferred to the AIF as a captain and was posted to 1 Squadron AFC, Egypt in May 1916. He raised 2 Squadron and commanded it in France in 1917 and in 1918 he was Lieutenant-Colonel Commanding the Australian Training Wing at Tetbury in the U.K. In 1920 he was offered the position of Controller of Civil Aviation in Australia but refused it because of business reasons. He was drowned on 18 May 1921 at Bilgola Beach under circumstances similar to those which were to cause Taylor's death in 1928. A grant was made to Sydney University from his estate.

to fly in England (Royal Aero Club Certificate 112) in Bristol aircraft.

To take advantage of existing facilities and no doubt to avoid buying land it was decided to site the School near RMC Duntroon and in 1912 two officers of the College showed Watt several areas.

One area was 'Woden House' where the present Canberra-Cooma road joins the Queanbeyan-Tharwa road, about 6 miles SSE of Capital Hill. Watt ruled this out due to the surrounding hills but there is an airstrip there today. The other area which Watt described as '... surpassing anything I have seen on Salisbury Plain...' was about a mile and a half from the present location of HMAS *Harman* towards Canberra and included the eastern half of a hill now known as Mahon Trig. The Military Board, in due course, agreed to this area and started the tiresome business of land acquisition so familiar to QMG Branch officers. They did not get far.

On 15 November 1912 the Director of Commonwealth Lands and Surveys (then part of the Department of Home Affairs) in a memorandum to the Administrator of the Federal Capital Area objected strongly to the area that the Defence Department was considering for the reason that; it was too close to the site of the city, it was too near the Queanbeyan-Uriarra road (the present Canberra Avenue) 'on which there was considerable traffic' and that there was the problem of the extreme noise made by aeroplanes.

There is nothing new under the sun, even including noise abatement societies!

The Military Board wilted under attacks such as these and fell back on the time-honoured device of having someone else report on exactly the same subject with the hope that a new report would please everybody. The man chosen for the new survey was Lt. Petre.

Petre looked at the sites in Canberra and wrote that he thought the area of Mahons Trig, which had been selected by Watt, a poor one. He considered the site of the present Canberra Airport at Fairbairn good, and also reported on the Naval Reserve at Hann's Inlet, Victoria and Langwarrin, near Frankston. However, Petre had just come from Europe where some of the thinking favoured 'hydro aeroplanes' and on 13 March 1913 he recommended to the Military Board an area on Port Phillip Bay near Werribee which would permit both the operation of seaplanes and landplanes. This area was known as Point Cooke (until presumably a clerk left off the 'e'). However Military Orders for some years referred to 'Central Flying School, Werribee'. The 734 acres cost the Army £6,040-2-3 and a considerable amount of correspondence with Treasury.

A Military Board Submission

Before the question of the site for the Flying School had been resolved Military Board met at AHQ Melbourne on 11 September 1912. Only three members of the Board were present — the CGS (Brig.-Gen. Gordon), the QMG and the Finance Member — and there were only three items on the agenda. Since two of these dealt with Rifle Associations (the responsibilty of the AG) they were deferred until later. The third item was 'Proposals Submitted by GCS for Formation of a Flying School and Corps'. The submission began, 'In view of the Minister's Minute of 1-7-12, it is propsed during the year 1912/1913 to establish a central Flying School at Duntroon. The functions of the school will be the training of candidates for the personnel of a Flying Corps, to be formed hereafter, in:

(1) Art of flying, including cross-country flights.
(2) General principles of mechanics and aeronautics entering into the construction of aeroplanes.
(3) Construction, maintenance and use of instruments, internal combustion engines, etc., forming part of the technical equipment of the corps.
(4) Meteorology.
(5) Observation in the Air.
(6) Air navigation and flying by compass.
(7) Photography from aircraft.
(8) Signalling by all methods as applied to aircraft.
(9) Instruction in types of warships and aircraft of all nations . . . '

This syllabus only goes to show that nothing much changes in 50 years.

The submission went on to say that:

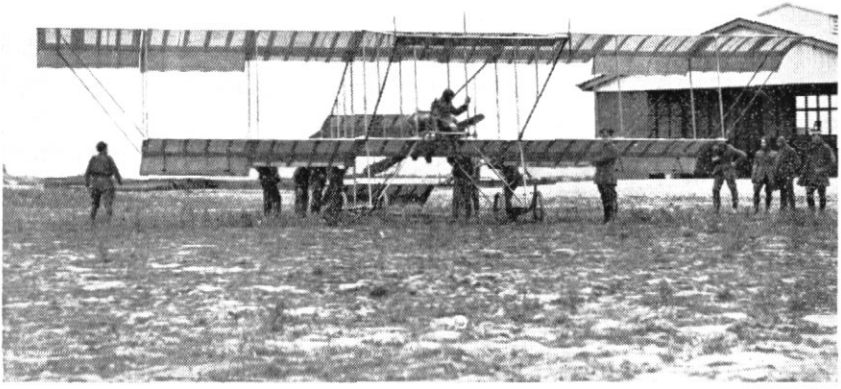
- The composition of the Corps should be 4 officers, 7 warrant officers and sergeants, 32 air mechanics.
- Of this total, 2 officers, 1 sergeant and 6 air mechanics should be permanent Army and they would form the Flying School.
- In addition there would be 4 labourers, 2 cooks and 2 waiters on the strength of the Flying School.
- Four aircraft would be required.
- First line transport would amount to twelve vehicles.
- The School would be raised during the first year, the Corps the next year.
- Overall cost to set up the Corps and Flying School and including such items as flying pay (10/- per day) buildings, hangars, the pay of the two permanent officer flying instructors (£400 p.a. each), rations (1/6 per man per day) and maintenance of uniforms would be £13,339.

The Board concurred with the principles of the proposals submitted by the CGS but suggested, almost as a reflex action it would seem, that when the regulations for the Flying School were to be drafted the following paragraphs should be inserted:

- The Department to be absolved from payment of compensation in the case of accidents.
- Married men to be prohibited in actual flying work.
- There should be an upper age limit for the officers and soldiers in the Flying School and Corps.

The Minister of Defence approved the CGS's submission on 20 September 1912 and MO 570 issued on 22 October 1912, titled 'Flying School and Corps' began: 'Approval has been granted for the formation of a Flying Corps in Australia'. The Military Order went on to give the details of the scheme.

Then, in the leisurely fashion of the day, orders were eventually placed for four aircraft, later increased to five.



Bristol Boxkite at Point Cook 1914. The first course trained on this machine. It was a pusher type — the propeller (and engine) was behind the pilot. Speed was assessed by the sound of the slipstream on the bracing wires. Details: loaded weight 900 lb, 50 horsepower Gnome engine, maximum speed 40 mph, span 46 ft 6 in, length 38 ft 6 in.

Photograph: *Australian War Memorial*

Another Submission

After the aircraft has been ordered, and subsequent to his arrival in Australia, Petre suggested certain amendments to the submission of 11 September 1912. These suggestions were incorporated in a paper which went before the Board on 4 April 1913. Briefly, the paper asked for a larger regular staff for the Flying School (6 officers, 4 WO and NCO's, 1 clerk and 14 mechanics), 12 Citizen Force officers for the Flying Corps, and one squadron of a headquarters and two flights each of four aircraft. The Board concurred in these proposals put forward by the CGS but the Minister of Defence (Senator Pearce) gave his decision on 8 May 1913, less than 15 months before the Great War: 'These proposals are too costly at present stage of aviation in Commonwealth Defence Forces. CGS to draft a more moderate Scheme'.

The Aircraft Arrive

The aircraft ordered from England were two BE (British Experimental) biplanes at £850 each — Geoffrey de Havilland was one of its designers — two Deperdussin monoplanes made by Bristol's at about £480 each and one Bristol Boxkite. Petre saw the Deperdussins under construction. All these aircraft were damaged during the sea voyage from the United Kingdom in 1913 and when they arrived at Victoria Barracks Melbourne the four mechanics were put to work to repair them.

In February 1914 the Aviation Instructional Staff moved out to Point Cook. Here Petre and Harrison faced a big task. Tents had to be erected, special canvas hangars designed and put up, the aircraft had to be made airworthy, they had to hire staff and do the hundred-and-one things required to set up a brand new unit on a bleak and muddy wasteland. Whether during that first winter Petre regretted his selection of the site is not known but subsequent generations of pilots have forcefully and picturesquely expressed their opinions of the Point Cook climate.

The first flight took place on Sunday morning 1 March 1914 when Lieutenant Harrison flew the Boxkite. Later that morning Lieutenant Petre flew a Deperdussin.

By dint of hard work, in July 1914, about three weeks after the shots were fired at Sarajevo, Petre was able to report the School could take its first course the next month.

The First Course

Thirteen days after the declaration of war the first course of four officers marched into Point Cook. They were a regular officer—Lt R.

Williams[6] of the A and I Staff and three Citizen Force Officers—Capt T. W. White, 60 (Prince's Hill) Infantry[7], 2/Lt D. T. W. Manwell, 16 (Indi)LH[8] and 2/Lt G. P. Merz, Melbourne University Rifles[9].

The four students reached final test standard at the same time so match sticks were drawn to decide who would go first. White won but did not land in the white circle. Williams was next, made the circle and so became the Army's senior pilot. Then they waited for someone to send them to the wars.

The Great War

Shortly after war was declared on 4 August 1914 the Australian Naval and Military Expeditionary Force (AN&MEF) was raised. This Force was to seize German possessions in the Pacific. The original lift of the AN&MEF which captured Rabaul was commanded by Colonel Holmes[10], a CMF officer with South African War experience and a Vice-President of the Aerial League of Australia.

Following the experiences of the AN&MEF, on Holmes' urging it was decided that subsequent operations should be supported by aircraft and therefore an Army B.E.2A from Point Cook and a Farman seaplane, presented by Sydney businessman Mr. L. Hordern, were shipped north from Melbourne on 30 November 1914. The pilots were Lt Harrison[11], freed from his instructional duties and the recently qualified Lt Merz. However, the aircraft remained uncrated and early in 1915 the disappointed pilots returned to Australia. It is interesting to reflect that it took another 51 years and no end of lessons before the army got around to including such essentials as aircraft in the inventory of an overseas force.

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[6] Air Marshal Sir Richard Williams KBE CB CBE DSO born 3 Aug 1890. CO 1 Sqn AFC 1917/18, Comd 40 Wing RAF 1918/19, Wing Commander RAAF, 1921, CAS RAAF 1920-22, 1925-32, 1934-39, Air Member for Organization and Equipment RAAF 1940-41, HQ RAAF London 1941-42, RAAF Representative Washington 1942-46, Director-General of Civil Aviation 1946-55.

[7] Sir Thomas White KBE DFC VD, born 26 Apr 1888. First Half Flight 1915, PW 1915-18, CO 6 Bn 1926-31, MP for Balaclava 1929-51, Minister for Trade and Customs 1933-38, RAAF 1939-45 Gp Capt, Minister for the Air and Civil Aviation 1949-51 (Williams was his Director-General), Aust High Commissioner London 1951-56. Died 13 Oct 57.

[8] Captain Manwell MBE born 23 Aug 1890. 1 Sqn AFC. Staff Officer (Equipment) AFC London 1918.

[9] Lieutenant Merz, born 10 Oct 1891, was a doctor of medicine. He went to school at Ballarat where for a short period a fellow schoolboy was R. G. Menzies. Merz was the first Australian pilot to be killed in action—in Mesopotamia 30 July 1915.

[10] Later Major-General W. Holmes CMG DSO VD. Comd 5 Inf Bde AIF 1915/16, Comd 4 Div AIF 1916/17. Died of wounds received whilst showing the Premier of NSW around the Messines battlefield. Appropriately, a road bordering Kingsford-Smith Airport Sydney, is named after him.

[11] Harrison later served in 1 Sqn AFC and was CO Central Flying School Point Cook 1918. He was one of the 21 original RAAF Officers and 1928-45 was Director of Aeronautical Inspection, rising to the rank of Group Captain. He died on 5 Sep 1945.

Soon after this, on 8 February 1915, the Viceroy of India asked if Australia could provide aviators, mechanics, aircraft and transport to support the campaign in Mesopotamia (now Iraq) because Great Britain was too deeply involved in France to assist. Australia replied, on 26 February, that she would provide men and vehicles but no aircraft and so the ill-fated First Half Flight was raised. Ultimately it reached a strength of about 50 all ranks. The four pilots were Capt Petre (OC), Capt. White, Lt. Merz and Lt. Treloar. Lt. Treloar held a commission in the 72nd Battalion and had learned to fly in England.

The B.E.2A was the pride of the Army and the 1914 equivalent of today's 'hot ship'. This was the first practical inherently stable aircraft i.e. if disturbed from straight and level flight, it tended to return to that state of its own accord. Details: loaded weight 1600 lb, 70 horsepower Renault engine, maximum speed 70 mph, span 35 ft 6 in, length 29 ft 6½ in.
Photograph: *Australian War Memorial*

At Basra in May 1915 the Flight married up with its aeroplanes, two Maurice-Farman Shorthorns and one Longhorn. It was a unique experience for the men as most had never worked on aeroplanes. These machines were totally inadequate as they were barely airworthy, difficult to maintain and no match for the heat, thin air and dust of Mesopotamia. The Flight was strengthened by another pilot, Lt. W. Burn, a New Zealander, Australian born.

The Half Flight arrived in Mesopotamia just when the campaign there started on the way to being an expensive side-show. The advance

towards Baghdad began and the aeroplanes were mainly used for reconnaissance. Two more machines (Caudrons) were taken on strength and in one of these Merz and Burn, on a flight from Nasiriyeh to Basra, disappeared and were never seen again. The next casualty was Lt Treloar who was taken prisoner when he forced landed behind the Turkish lines.

The Half Flight was absorbed into 30 Sqn of the Royal Flying Corps in August 1915 and in addition to visual reconnaissances aircraft were used for mapping or proving the rough maps of the area. To assist in this Captain Petre devised an implement for measuring azimuth.

The Sopwith Camel was one of the outstanding fighter aircraft of the 1914-18 War and those pictured above are part of No. 4 Squadron AFC, France, March 1918. An Australian civilian (Harry Hawker) was one of its three designers. The gyroscopic effect of its rotary engine meant that in turns to the right it could out-turn all other machines and both left and right turns required left rudder for balanced flight. Details: loaded weight 1523 lb, 150 horsepower 9 cylinder Bentley rotary engine, maximum speed 115 mph, span 26 ft 11 in, length 18 ft 6 in, two Vickers and one Lewis machine-guns and a 1918 cost of £1668 sterling.
Photograph: *Australian War Memorial*

In November 1915 the third Australian of the original Half Flight was lost when Captain White (accompanied by Yeats-Brown of Bengal Lancer fame) damaged his aircraft on landing behind the enemy lines. The intention was to cut Turkish telegraph wire and Yeats-Brown succeeded in doing this. They hoped then to taxi their damaged machine to safety as they had done once before but this time the Arabs were too quick for them and they were taken prisoner.

This left only Captain Petre[12] who did good work during the siege of Kut dropping food and equipment to the beleaguered garrison.

[12] Petre was later awarded an MC, then a DSO. He resigned from the AIF on 31 January 1918 and returned to England. In 1961 he re-visited Point Cook. He died shortly after this visit.

Corporal Stubbs of the Half Flight (later Chief Engineer of ANA) made small parachutes and a millstone to grind corn was dropped into Kut, which fell on 29 April 1916. 13,840 allied troops, including nine Australians of the Half Flight became prisoners of war. Seven of the Australians died in captivity.

There were four squadrons of the Australian Flying Corps in the AIF during the war and their activities are tabulated thus:

Original Title	New Sqn Title (Jan. 1918)	Date First in Action	Theatre	Role	Aircraft Used	Commanding Officers
67 Sqn RFC	1 Sqn AFC AIF	Sept. 1916	Egypt Palestine	Recce. Fighter	Martin-syde BE 2c and e BE 12a Bristol Scout Bristol Fighter RE 8	Lt. Col. E. H. Reynolds[13] Maj. H. D. K. Macartney[13] Maj. R. Williams[13 14] Maj. S. W. Addison
68 Sqn RFC	2 Sqn AFC AIF	Oct. 1917	France	Fighter	DH 5 SE 5	Maj. O. Watt Maj. W. Sheldon[13] Maj. A. Murray Jones
69 Sqn RFC	3 Sqn AFC. AIF	Sept. 1917	France	Army Co-op.	RE 8	Maj. D. V. J. Blake[15] Maj. W. H. Anderson[16]
71 Sqn RFC	4 Sqn AFC, AIF	Jan. 1918	France	Fighter	Camel Snipe	Maj. W. A. McCloughry[17]

(The names of officers who commanded for brief periods are omitted)

Other notable points can be summarized:

- The four front-line squadrons were backed up by four training squadrons in Great Britain.
- Point Cook had only a limited output of pilots due to lack of aircraft and instructors. In fact only 85 pilots were trained there between 1914 and 1918 and some of these men were transferred to 2 and 4 Sqns AFC before completion of their course.
- Some pilots were also trained (and very successfully) by the NSW Education Department on a common at Richmond — now RAAF Richmond.
- Australia was the only Dominion to operate a Flying Corps during the war and this helped enormously later on when leaders were required for the new RAAF.

[13] Regular officers.
[14] The student at the Central Flying School's first course.
[15] Later Maj. Gen. Blake, a permanent soldier, born 10 Nov 1887, commissioned into A and I Staff 1 Feb 1911; AIF (AFC) 1914-1919; CMF appointments to 1935; Brig. Adm HQ S Comd 1939-40; Dist. Comdt 7MD 1941; Comdt NT L of C Area 1942. Died 6 March, 1965 It was mainly due to family reasons that Blake rejoined the Staff Corps after the Great War
[16] Later Air Vice Marshal.
[17] Later Air Vice Marshal in the RAF.

- Present day Army pilots doing their 120 hours at BFTS and a further 100 or so hours at Amberley before being badged, may reflect on the flying training of those pilots of the First AIF. Between 12 and 25 hours was about the average figure for a pilot posted to France.
- Over 200 Australians served in the Royal Naval Air Service or the Royal Flying Corps. This number included Kingsford-Smith, Hinkler, Percival, Goble, O'Hara Wood, Pentland and P. G. Taylor. 183 of them transferred from the AIF to RFC.
- Even allowing for their small numbers, distressingly few permanent officers served in the Australian Flying Corps. For example, 131 Australian graduates of RMC were on active service with the AIF. After making allowances for the number killed at Gallipoli (17) and for other exigencies, it is still surprising to learn that only one officer became a pilot.[18]
- The War was more than half way through in terms of time before the squadrons were on front-line duty. This delay was mainly due to an over-reliance on the War Office for direction and the time it took to train men and to get equipment.
- The Aviation Instructional Staff remained in the AMF until September 1918. It was then disbanded and its function was continued under the name of No. 1 Home Training Squadron. This unit was disbanded in December 1919.
- At war's end the Australian Flying Corps had an officer strength of 2 lieutenant-colonels, 9 majors, 27 captains and 386 subalterns. There were 52 men under instruction.
- The only unit of the AIF which took part in the occupation of Germany was 4 Squadron. They were based at Bickendorf Airfield, Cologne from 14 December 1918 to the end of February 1919.

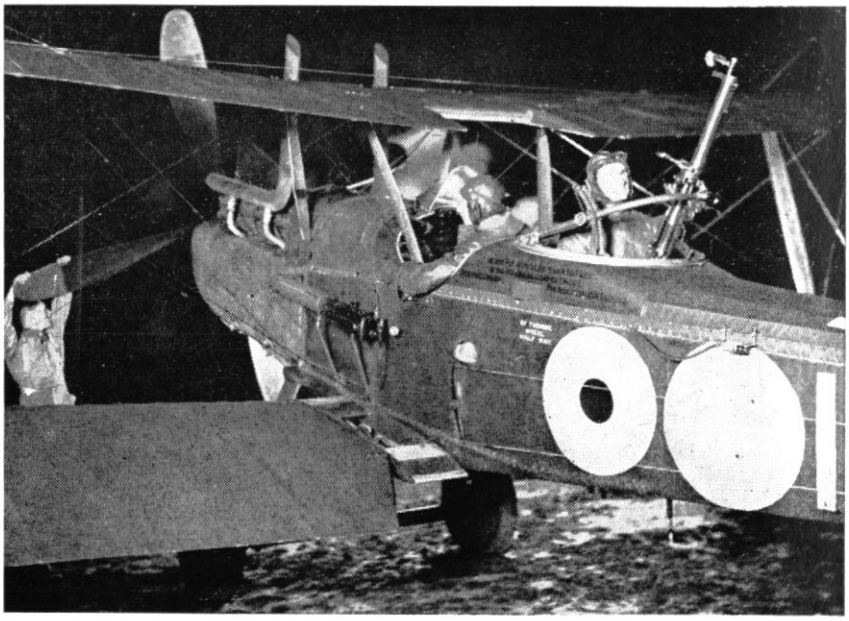
Big Plans in Australia

The German offensive 'Michael' of March 1918 and the threat of Japan (even though she was our ally) had their effects in Australia, We were practically defenceless. The CGS, then Major-General Legge, on 29 April 1918 presented a memorandum to the Minister of Defence (still Senator Pearce) which pointed out our weaknesses and asked for, as a war measure of pressing importance:

- a military air force proportionate to the Army Australia was then maintaining;

[18] Lt L. J. Wackett. Later Wing Commander RAAF and Sir Lawrence Wackett DFC, AFC, B.Sc., F.R.Ae.S. Born 2 Jan 1896, Pioneer of aircraft industry in Australia, Managing Director Commonwealth Aircraft Corporation Pty. Ltd., 1936-1960. Oddly enough, when Kingsford-Smith and Ulm were in California in 1928 preparing for the first epic trans-Pacific flight to Australia, Wackett was strongly against the enterprise. He called it 'madness' and criticized them for using an aircraft built by the same firm (Fokker) which supplied machines for the Germans in the Great War.

- the immediate raising for the defence of Australia a citizen force of 300 officers and 3000 men;
- the immediate construction in Australia of 200 aircraft and 12 balloons.
- An eventual air service establishment of 15 squadrons, 654 officers and 7,209 men (of which 20 officers and 500 men were to be regulars), and a total of 270 aircraft. Later the CGS estimated that the initial cost of this scheme would be under £1,000,000 and the annual cost would be £465,000.



R.E.8 ('Reconnaissance Experimental') of No. 3 Squadron AFC ready for a night bombing sortie in France in October 1917. Details: loaded weight 2678 lb, 150 horsepower 12 cylinder Royal Aircraft Factory engine, maximum speed 100 mph, span 42 ft 7 in, length 27 ft 10 in, 1918 cost £2268 sterling. (The present day Army Cessna 180 has a loaded weight of 2800 lb, 230 horsepower 6 cylinder Continental engine, cruising speed 130 mph, span 36 ft, length 25 ft 6 in and costs approximately $38,000.

Photograph: *Australian War Memorial.*

Papers from both the Military Board and the Naval Board contended that Australia should be self supporting in the manufacture of aircraft and Cabinet agreed with this. On 13 August 1918 Cabinet authorized the expenditure of £3,000,000 to 30 June 1921 and

minuted: 'Council of Defence to arrange allocation and details'. But this far-seeing scheme (and others) came to nothing in a morass of committees and with the end of the War.

And Then There Were None

The Great War was 'the war to end all wars' — a catchcry which ignored all the lessons from the history of mankind — and so the AIF and its AFC squadrons were disbanded with almost indecent haste. Aircraft and equipment used by the AIF belonged to Great Britain, so these were left on the Continent.

During 1919 and 1920 there was considerable discussion by various committees on the shape of the post-war air service for Australian defence. Politicians on both sides of the House were in favour of air defence mainly because they believed (wrongly) that it would be cheaper than maintaining soldiers and/or ships. For some time an Australian Air Corps was proposed and there was a scheme for servicemen and service aircraft to operate such peaceful public utilities as the air mails.

Certainly it was a difficult time for those who wished to continue serving in an air service. The Minister of Defence remarked to a RSSILA. (now the RSL) delegation that the Air Corps 'was nobody's baby'.

This delegation was seeing the Minister on behalf of returned men who were not given preference to sign on over those who did not go abroad and to ask why the AFC's only VC winner had been refused a permanent commission.

Eventually following the lead of Great Britain which had established a separate air force on 1 April 1918, an Australian Air Force came into being on 31 March 1921.[19] The prefix 'Royal' was added that July.

The wisdom of this complete transfer of all aircraft from the Army and the Navy to an air force can be debated to this day. Certainly emotion replaced logic and for over 40 years slogans and shibboleths such as 'seamless coats' and the 'indivisibility of air power' replaced reason. During World War 2 the strength of an air force concept was seen in the Battle of Britain; the tragic weaknesses seen in its failure in army support, in the Battle of the Atlantic and in aircraft for the Navy. These weaknesses are still with us today in Australia. Clearly the old simplicity of organization by element no longer fits our defence requirements.

Talleyrand said that war is much too serious a thing to be left to military men. Similarly it can be said that aircraft are much too important to be left to one service. □

[19] With more aircraft than men—21 officers and 130 men but 128 aircraft (DH-9, SE-5a) as a 'gift' from the British Government and 36 Army aircraft already in Australia. However, most of these 'gift' aircraft remained crated for a considerable period.

On Understanding Asia

Squadron Leader R. G. Funnell,
Royal Australian Air Force

We are all aware of Asia. Many of us are afraid of it; few of us understand it.

— J. F. Cairns, *Living with Asia* (1966)

Introduction

TODAY Asia is the focus of world attention. The traditional way of life of its people is ending. Against a background of political, social and military struggles, the Asian peoples are attempting a reformation of the continent's social and political organizations. This reformation is both the result of and the reaction to the stimulus of Western ideas and attitudes but most of what happens in Asia is, at best, only vaguely understood by the West.

Viewed from the West, Asia is both bewildering and exasperating. The West has been frustrated in its attempt to remake Asia in its own image. Its reactions to this have been inadequate and, in most instances, have aggravated the problems of a continent that is already in turmoil. This situation must be corrected, for the future of this planet will depend greatly on what happens to Asia in the next fifty years.

Squadron Leader Funnell joined the RAAF as a cadet in January 1953 and graduated as a Pilot Officer from the RAAF Academy Point Cook in December 1956. Except for two staff appointments in Brisbane and Canberra and a year at the RAAF Staff College, all his service life has been taken up in flying appointments. He has served variously as Commanding Officer (79 Squadron), Flight Commander (No. 1 Advanced Flying Training School and No. 78 Wing); and as a squadron pilot (No. 23 Squadron, 78 Wing and 81 Wing). During his flying career, mostly on fighters, he has also qualified as a flying instructor and has completed several specialist courses all associated with flying.

This essay, which earned him the E. L. Heymanson Award was written while he attended the RAAF Staff College, Fairbairn in 1967.

Does Asia Exist?

Our lack of knowledge has led us to make many inaccurate generalizations about Asia and Asians. We often refer to 'typically Asian behaviour' when the typical Asian does not exist. In Asia today can be found examples of almost every stage in the growth of civilization. Asia is the least homogeneous of all continents. Its physical diversity has created a broad spectrum of environments in which a multitude of societies have developed. The Afghan tribesman has little in common with the Japanese factory worker; the Indonesian subsistence farmer is the antithesis of the Chinese entrepreneur; but some ideas and attitudes are shared by Asians in general for they are the result of a similar cultural tradition.

Asian Society

The social and economic structure of Asian society has always been agrarian and the central unit of the society has always been the village. The attitudes that village life bred were conservatism, passivity, fatalism and acceptance of authority. Communications were poor and very little cultural cross-fertilization took place. Conquerors came and went; empires ebbed and flowed; but the village remained, and to a large extent it remained uninfluenced by such external factors. This was the Society into which Western man intruded with his new ideas and concepts.

The Impact of Western Ideas

The West's impact on Asia was enormous. It introduced sceptical, pragmatic and secular thinking to a traditional, feudal, provincial society which had not lived through a Renaissance, Reformation or Industrial Revolution. It introduced science and technology, liberalism and social egalitarianism, to a continent that was ill-prepared to receive them.

In Asia, science and the scientific method of thinking have been socially ambivalent. Science has increased productivity and life expectancy but has contradicted many of the beliefs and practices that were an integral part of Asian societies. If science were accepted then the whole structure on which society was based was in ruins. Asia had the choice of retaining the traditions and customs of the past or attempting a dramatic reorganization of the complete social structure to conform to these new ideas of life.

Accompanying scientific thought was Western liberalism and its ideas of individual man and his relation to the State. To the conservative, feudal villager the ideas of political freedom, personal liberties and democratic government were incomprehensible. The state was a monolith; the bureaucracy was all-powerful; but, if one did as one was ordered, life went on as before. Liberalism with its radically new ideas of law and government openly confronted these concepts.

And there was the idea of nationality. As Toynbee put it, 'this fatal Western idea'.[1] The gestation period of Asian nationalism was a long one but the resulting birth has been noisy and troubled. Accepting the often illogical boundaries established by the imperial powers, the nations of Asia have achieved independence in a very short period of time. The struggle for nationhood was not, however, a groundswell produced by the masses. The struggle was directed by a few who used the masses to achieve the aim of political independence.

The impact of Western ideas and attitudes was enormous but it was also superficial. These ideas failed to reach down deep into Asian society and even those to whom the ideas were transmitted grasped only the ideas and not the spirit and substance of them. What has resulted in the new nations of Asia is vacillation, both individual and national, for Asia and Asians are unwilling to reject completely those traditional values and beliefs which are being confronted. This inhibits the acceptance and application of Western concepts.

The Democratization of Asia

Today Asia is at the crossroads. Asia must move forward. Many Asians wish it were not so. To them a retreat into the glorious past with its village-oriented society and its clearly-defined social structure is the most satisfactory solution to the present problems of the continent. The world, however, will not allow this. Willingly or unwillingly Asia in the next hundred years will go through the processes of modernization, industrialization and urbanization. The techniques to be used in these processes have not yet been decided and both the West and the Communist Powers are trying by all possible means to influence the choice that the Asian nations must make.

Unfortunately for the West the prerequisites for an Anglo-American style of democracy do not exist in Asia. Even more unfortunately the leaders of the Western nations have failed to appreciate this. Their efforts have been directed towards erecting a democratic framework upon which can be built a modern, economically sound Asia. Their efforts can be admired but they are also futile. The democracy we are trying to sell, the Anglo-American style of democracy, has succeeded in only a very small number of nations. Six hundred years of revolution and strife were needed to drag man out of his feudal past into the brave new world of the twentieth century but, even in these Western democracies, excesses and internal contradictions still exist — the true, liberal democracy for which we have been striving has not been achieved. Yet the West is trying, at great expense in lives and material, to establish in Asia what it has itself failed to achieve.

If experience is the guide, the necessary preconditions for democracy are a relatively compact society, revolutionary ideas and spirit,

[1] Arnold J. Toynbee, *The Western Question in Greece and Turkey*, p. 17.

a dedicated minority willing to work and fight for their ideals, and natural resources. As these preconditions are not present in Asia some modification of democracy must be made. A broad-based political movement will not succeed for the base is passive and ultra-conservative and can be stirred into activity only by playing on ancient prejudices and beliefs. The results of doing this are always destructive and self-defeating. A liberal economy is also impossible for the necessary excess of resources is not available. The economy must be well-planned and closely directed for resources are few and mismanagement can be disastrous. Obviously democracy in its classical form is not the panacea for the new nations of Asia or the world.

For an Australian to publicly disavow democracy as the answer to Asia's problems is akin to using four-letter words in female company. People hear you but they don't believe that you uttered the dreadful words. But we must accept what is obvious — democracy in Asia in the next hundred years is an illusion. In Australia and in other free-world nations we are acclaiming the Presidential elections in South Vietnam as a triumph for democracy and the West. We delude ourselves. Democracy is not an elected legislature with an executive responsible to it. Democracy is a pervasive concept which must reach down into and be understood at all levels of society. The old autocracies are being given new names and external appearances but there is no fundamental change — the sheep has a new coat but it is still the same sheep.

To Asians, democracy is physically attractive. The material benefits of democracy are constantly being held up to be admired and to show what democracy is capable of producing. Asians want

these things — the material benefits, the high standard of living, the hours for leisure and recreation — and they want them now. What both Asia and the West must appreciate is that such desires cannot be satisfied now, nor in ten years, nor in fifty years. The Western nations are wealthy but even they are incapable of giving Asians one tenth of what they desire. If Asia wants these things Asia must work for them. The work will be hard and the initial benefits will be minimal but unless a start is made now the Asian population explosion may well render the effort irrelevant. But start where? If democracy is not practicable perhaps another Western political development, communism, is.

Comunism as an Alternative

Many observers maintain that Asia is a barren field for the spread of communism. They point out that Asians are repelled by the intolerance of communism, its brutal suppression of opposition and its extermination of religion. That is one side of the coin. On the other side, Asians are attracted by the ability of communism to transform poor, agrarian nations into powerful, industrial nations in a short period of time. In Russia, communism resurrected a nation in ruins and in forty years produced a super power. The lesson was not lost on China, which, through communism, has achieved its own miracle during the last twenty years. In the West the inhumanity of communism and its methods are abhorred and its ideology rejected but Asians do not judge communism from a Western viewpoint. To them communism is a demonstrably effective vehicle for transforming societies such as theirs into modern, industrial societies enjoying international prestige and status. To argue that Asian society is not ready for communism is to equate communism with Marxism and China has already shown the illogicality of that. It also presupposes that Asians place greater stress on ideologies than, in fact, they do.

Communism does offer an attractive alternative to democracy in Asia. As time passes and democracy fails to produce what it has promised, communism will become even more appealing. Today the pressure to accept communism is enormous and we can expect this pressure to increase in the future. Unfortunately for the hawks in the West the problem of containing communism is incapable of being solved by military methods and unfortunately for the doves the problem cannot be solved by ignoring it. What is required of the West is a dramatic re-appraisal of the Asian question — a re-appraisal that discards all previous prejudices and pre-conceptions to produce a solution that is based on the fundamentals of the problem.

A Re-appraisal of Asia

The problem of Asia will ultimately be solved by Asians but the West has been asked to assist and, for reasons of both humanity and

self-interest, the West should do so. The Western re-appraisal I have asked for should begin with the normal problem-solving technique of defining the problem and then collecting and collating facts. We cannot rely on impressions, half-truths and misconceptions as we have done in the past. We must seek for and find the fundamental truths of Asia. Our present knowledge of Asian history, Asian society, Asian culture and the Asian mind is hopelessly inadequate. If this situation is corrected, the theories which evolve and are then tested in practice will be more meaningful and pertinent than our present inept attempts to assist in Asia.

What the solution to the problem will be is extremely difficult to forecast. Democray of the Westminster type has been shown to be inapplicable. Communism is a bleak alternative but one that may well be tried unless the West acts swiftly and purposefully. The political solution that suggests itself is a highly authoritarian state in which an enormous amount of economic and social power is concentrated in a few hands. The possessors of these hands must, of necessity, be determined, ruthless, even fanatical. They must be a well-disciplined, hard-working group who know exactly where they are going and how to get there. They must be so, for what they are required to do is uproot the traditional social structure of Asia with its ancient customs and beliefs and replace it with a modern society capable of surviving in the urgent and troubled times of the twentieth century. Opposition to the group from the masses will be strong but must be largely ignored if the venture is to succeed.

Do groups such as this exist in Asia? The various communist groups spring immediately to mind. They do constitute a dedicated, disciplined group who have defined their goal and who have the determination to achieve it. With their brutal, inhumane methods they have, however, adopted the extreme position. What is needed are leaders with the same fervour but tempered with more moderation and humanity. Such people, and I believe they do exist, should be fostered and encouraged with both material and moral support. Their performance should be judged on the success or otherwise of their efforts and not on their popularity with the masses. The West must restrain itself and not attempt to influence these new leaders to liberalize or democratize their regimes before their nations are ready. Western interference of this type will merely hamstring the leaders and produce political chaos and ineffectuality. Democracy will eventually come but it will come from inside these new nations and in a form that is suited to their own cultural heritage and national requirements.

The time-scale of the whole revolutionary process from present chaos to the eventual modern, free, self-sufficient society is impossible to predict. All one can say is that it will certainly take a long time

and development will be uneven both within a nation and between nations. Obviously the more advanced nations such as Japan will take less time to achieve the goal once the revolution has started.

The Future of Asia

As yet the revolution has not started. The new nations of Asia are confused and bewildered. Having achieved their previous goal of nationality they no longer have a clear picture of where they are heading or what they wish to become. The West has shown them the material benefits of modernization and industrialization but has offered little real help in achieving them. In politics, the solution that the West has offered to the new nations has had little success for it has had no real pertinence.

If the West is to have any significant and salutary influence on future events in Asia a complete re-thinking of the basics of the problem must be undertaken. We cannot hope to achieve our aims by continuing in our present uncertain and ineffectual manner, always reacting to some new stimulus, never seizing the initiative and creating our own stimuli.

If Asia is at the cross-roads so too is the West. What happens to the world's largest continent and largest mass of people in the next fifty years will be the major factor affecting the whole of the world in the twentyfirst century. I am sure that most people in the West accept this but they also fear Asia because they have little understanding of what is occurring there. They continue to judge Asian society, Asian culture, Asian religions and Asian actions by Western standards. This must be corrected. We must study and understand Asia and appreciate the desires and aspirations of its people. We must then apply what we have learned so that we can assist Asia in its struggle to find its true destiny. If the efforts of all are successful and Asia does emerge free and self-sufficient, posterity will applaud us. If we are unsuccessful our children or grandchildren may well experience hell on earth. □

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The Climates of South-East Asia

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During the wet monsoon it normally rains very heavily late in the afternoon. Night ambush patrols always started out about this time, getting thoroughly soaked in the process. In this condition they would squelch their way across country ensuring that they were not seen or heard, and at last light move into position. Throughout the night they would lie in their wet clothes trying to ignore the leeches attempting to extract their dues, waiting for the enemy. In the dry monsoon they would lie sweating throughout the night, thirsty and dusty, trying not to think of the abundance of snakes in the area.

— Vietnam: A Pictorial History of the Sixth Battalion, the Royal Australian Regiment 1966-1967.

Introduction

THE two basic determinants of the natural environment of any theatre of land warfare are the surface features of the land and the climate. The natural vegetation (largely undisturbed by man within the tropics) through which the war is fought, and the soils on which it is fought, are broadly determined by the relief and climate. This paper is concerned with the climate of South-East Asia and its direct effects on troops, equipment, stores and operations.

Temperatures

South-East Asia has been described as the wettest hot region of its size. It could also be said to be one of the hottest of the really wet regions of the world. With the exception of northern North Vietnam and the higher parts generally, the whole area has 'Tropical' climates with annual average temperatures of about 80°F. The sea-

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This is the second of a series of articles on the military geography of South-East Asia written for the AAJ by Professor Hodges, Head of the Economic Department of the Royal Military College, and by Mr Webb, Senior Lecturer in that department.

sonal range[1] increases with latitude and with protection from the moderating influence of the ocean. For example:

	Hottest mths.	Coldest mths.
Equator Pontianak (W. Borneo)	80°F	78°F
11°N Saigon (S. Vietnam)	85°	79°
22°N Mandalay (Central Burma)	90°	70°

The hottest time of the year is just before the wet season, especially if the rains are late, except near the equator where it is hot and wet all the year. The daily range of temperature averages 12-15°, being greater in the drier seasons, especially well inland. In most places there is more difference between the coldest and hottest hours of the day than there is between the coolest and hottest months. Frosts are unknown at low altitudes except in the extreme north of the region. Actual temperature recordings of over 100° are rare in the islands. Fairly constant heat, day and night, at all seasons, is the typical temperature pattern, and relief from this is only to be had by moving up into the mountains (as the colonialists did) or from the sea breezes.

Humidity

The temperatures described above would be quite tolerable if the air were less humid. The actual water-vapour content of the air varies very little, hourly or seasonally, but the relative humidity[2] in most parts of the region is about 90 per cent. at night and normally over 60 per cent. during the day. In Central Burma humidity below 40 per cent. may be enjoyed in the hotter months of the drier season.

Average daily relative humidity varies mainly with the patterns of seasonal rainfall. Near the equator, rainfall and humidity are very high all through the year. Away from the equator there is a drier season in which humidity is lower, but there are exceptions. In North Vietnam and the north coast of South Vietnam (e.g. Hanoi and Hue) relative humidity remains high during the drier season because of abnormally low temperatures. In NE Sumatra (e.g. Medan) humidity is slightly lower when the prevailing winds are offshore and have come over the mountains of W. Sumatra, even though this is the wetter season.

The high absolute and relative humidities are explained by the low altitudes and the high proportion of sea in the region. Any slight

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[1] The seasonal range is the difference between the average temperatures of the hottest and coolest months. The average for any month can be taken as the mean of the average of the daily maxima and the average of the daily minima during that month, taken over many years.

[2] Relative humidity is the actual water-vapour content of the air expressed as a percentage of the maximum possible vapour content for the same temperature. 100% represents saturation, this being achieved usually by a decrease in the temperature.

fall in temperature of the air is likely to cause much more condensation than would a similar fall in higher altitudes, and rain will usually come from downpours, not drizzle. Thus South-East Asia is a particular cloudy region, except in the dry season, where there is one. Taking the typical case of something over 2,000 hours of sunshine per annum, the sun is obscured by cloud on the average for half of each day — but cloudiness varies with the seasons.

Fog is common inland, even in very low altitudes. The land cools during the night, the adjacent air cools by contact, and condensation results because the air is usually close to vapour saturation. The mist has usually been reabsorbed into the air by 0900 hours or has been broken up by up-valley (anabatic) breezes. It is usually 10-50 feet thick and sometimes lifts bodily to form low cloud, but this has usually dispersed by 1000 hours. Near the coast the night offshore breeze normally prevents the formation of fog, but in the South China Sea persistent fogs are common about March-April when the sea is still relatively cold compared with the humid air above it. This sea-fog may be carried towards the Vietnamese coast where it tends to lift to form low stratus cloud.

Rainfall

Temperatures are fairly uniform over the region, but rainfall varies considerably from place to place, the annual fall depending mainly on the local relief and whether the station is to windward or leeward of mountains. Thus the climatic differences within the region are based mainly on rainfall and we need to examine air-movements and causes of condensation. Condensation is caused mainly by cooling, and cooling is caused mainly by air rising.

Sources of Rain

Thunderstorms — Where two major air-streams converge on one another air tends to rise (there is no escape downwards) and the rising leads to expansion, cooling and condensation. The very humid air of South-East Asia is largely 'unstable' in the sense that once it starts to rise its difference in temperature from the surrounding air increases, and it rises faster. Dense thunderclouds build up to heights of over 40,000 feet and heavy showers occur, often in line-abreast as one air-mass moves forward. The location of such storms varies with the seasons as the 'equatorial convergence' moves from southern Indonesia in January to northern China in July.

Similar storms may be caused by land and sea breezes. During the morning the land heats up much more than does the sea and the air over the land becomes lighter. Slightly cooler air flows in from the sea, undercutting the land-air which is thus lifted and cooled to

give storms. The process is assisted by the up-hill gradients of the land near most coasts and by daytime up-valley breezes. The result is regular late morning heavy cloud and afternoon thunderstorms inshore from the coast. These storms rarely persist after sunset when the land-heating has ceased.

Over the sea, cumulus cloud is at a maximum during the period midnight-early daylight. In coastal waters the night breeze from the land slides under the moist sea air, causing uplift and offshore thunderstorms in the period after midnight, especially where there is a long concave stretch of coast off which the land breezes converge. These offshore storms are often carried ashore by the more general winds so many coastal stations have two peak periods of rain: midnight-0600 hrs. and 1500-2000 hrs. 'At Penang, thunder is heard on an average of 204 days per year. It is heard during daylight hours on 124 days and at night-time on 152 days[3]. The daytime peak predominates in the season when the prevailing winds are offshore (Malayan E. Coast in late summer, W. Coast in the cool season) and the early morning peak when the winds are mainly onshore (Malayan E. Coast in the cool season. W. Coast in May-November). Well inland, the storms will be mainly in the late afternoon, regardless of whether the sea breeze penetrates that far. The downdraughts from some thunder clouds may undercut local air, giving rise to new storms about three miles down-wind, but at night the upper parts of a thundercloud may spread out as a sheet of medium-height cloud from which rain may fall for the rest of the night.

Cyclonic Eddies — These low-pressure systems develop in the upper atmosphere, mainly in the periods when the surface wind-pattern over a large area is not pronounced (viz. between the periods of summer and winter monsoons). They move mainly from east to west and are not violent though some do develop into full tropical cyclones (typhoons). Air in them tends to converge and rise and being unstable convectional rainfall results.

Tropical Cyclones or Typhoons — The typhoons of South-East Asia (known in other regions as tropical cyclones or hurricanes) are noted for their low air-pressures[4], strong winds and heavy rain. They mostly originate to the east of the Philippines and travel west before recurving to the north-east where some approach Japan. (Only about 30 per cent. of them originate in the South China Sea). The coast most frequently affected is from Hong Kong to Haiphong, but some follow latitude 10°N towards South Vietnam. The West Coast of Burma receives the side effects of cyclones in the Bay of Bengal.

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[3] I. E. M. Watts, *Equatorial Weather*, (New York, 1955), p.46.

[4] Barometers offer little guide to the weather forecaster in the tropics (where hour-to-hour changes are greater than day-to-day changes and both are very slight) except when a cyclone is already upon him.

A typhoon forms above an 'easterly wave' in which the Trade Wind has changed course, this movement breaking up the horizontal boundary between the surface moist air and overlying drier air. The moist air rises through the gap (forming thunder cloud) especially if drawn up by pressure conditions at high levels. The rising air begins to move in a horizontal swirl to form a vortex[5] and if this vortex develops a warm core which swirls rapidly upward, and a central down draught, then the full cyclone has evolved. In South-East Asia the winds are anticlockwise-inward at low levels and are of 'hurricane' force and up to about 140 mph up to a radius of perhaps 200 miles from the surprisingly calm central 'eye' but winds of over 35 mph may extend to a radius of 500 miles. The weather is worst in the forward right-hand quadrant (as elsewhere in the northern hemisphere) and there is a reversal in the wind once the eye has passed a given spot. The rain is heaviest where the winds are strongest and at least 12" can be expected. 88" once fell in four days in the Philippines. The soil cannot absorb moisture as fast as it arrives so most of the water runs off and flooding results, especially in estuaries and deltas at peak tides.

The approach of a typhoon is usually heralded by a 35 feet 'cyclone swell' travelling up to 1000 miles ahead at about 40 mph. The waves shorten and rise in height as the storm nears. Where a typhoon approaches a coast the onshore hurricane drives the sea forward, raising the levels of the tides and occasionally producing a devastating hurricane wave as well. Thus there would be coastal flooding in low-lying areas even without the rain.

The typhoon season in South-East Asia is from about July to November when the ocean and the surface air are markedly warmer than air at about 10,000 feet. The typhoon rain is an important part of the rainfall in eastern Vietnam and in the Philippines.

The Monsoons — One may distinguish a number of reversing winds in South and East Asia which are properly considered to be 'monsoons'. They are best looked upon as 'carriers of moisture' rather than causes of rain, though in fact in some places they are not particularly moist and drought results. The moisture associated with the monsoons is extracted as rain by (a) thunderstorm activity, (b) by 'easterly waves' in the overlying air streams which draw up the monsoon air, (c) by the equatorial jet-stream which blows from east to west at about 50,000 feet with a corkscrew motion which, on its northern side, lifts the monsoon air and (d) by mountain ranges which force the air to rise and shed 'orographic rainfall'.

The accompanying maps show the main air-flow at different times of the year, but it must be emphasized that around April and

[5] Because the force which causes the horizontal rotation of the winds is absent at the equator, typhoons are rare within 5° of the equator.

October the winds are very light to calm and quite variable in direction. (The streamlines on the maps unavoidably convey the impression of long-distance steady winds in these months). The precise physics and mechanics of the causes of these monsoons are still the subject of scientific investigation and debate, sparse separation of recording stations being one of the handicaps, but it seems that the traditional explanation in terms of the heating and cooling of various parts of Asia is largely unshaken.

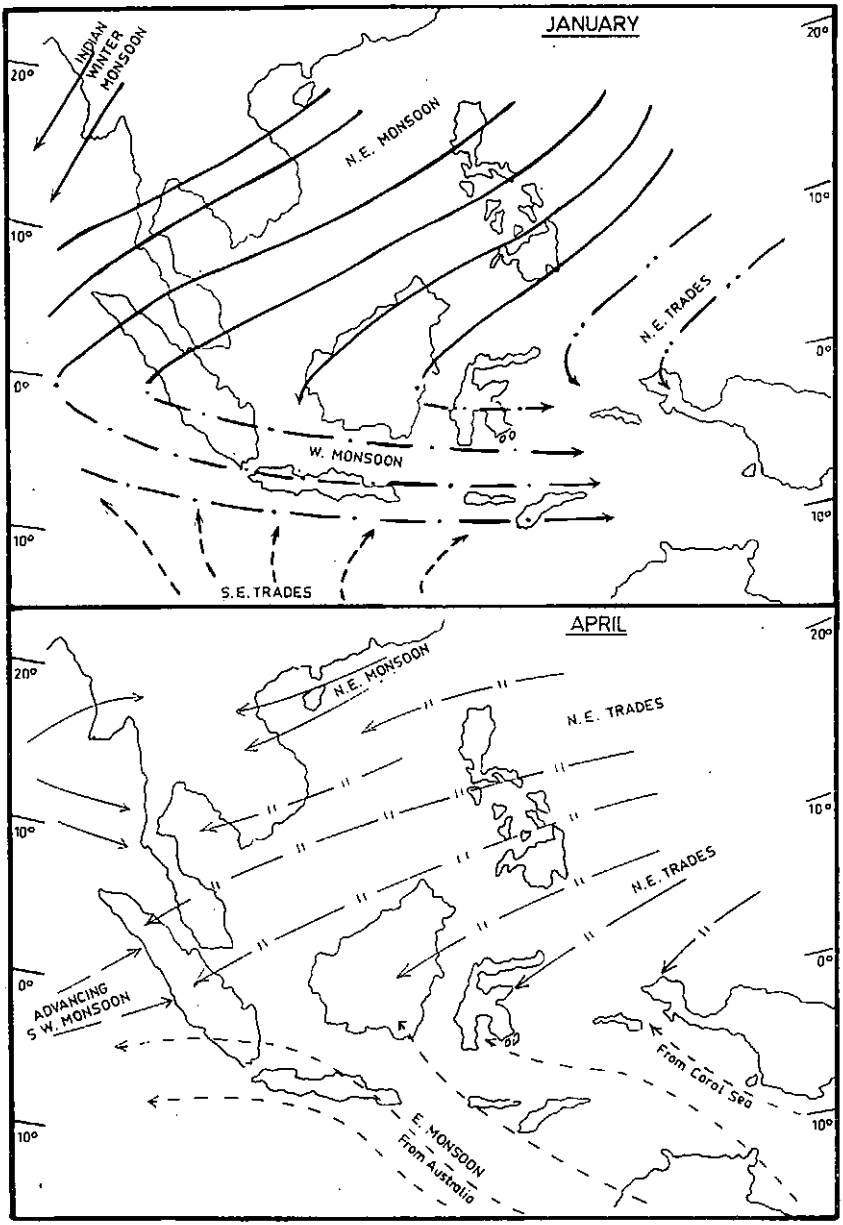
During the northern winter Asia cools down, especially in eastern Siberia. The air becomes heavier, a giant anticyclone forms over eastern Siberia and winds flow outwards at low levels (up to 10,000 feet over North Vietnam) in an enormous clockwise swirl, part of which is the North-East Monsoon of South-East Asia. (See the January map). Arctic air from Siberia does not reach further south than the Red River Delta but it brings abnormal cold for the latitude and some rain. 'In no other region of the earth in the same latitudes is this abnormal conjunction of cold and raininess to be observed[6]. Hanoi averages only 62°F in January-February but there are cold spells and it is 8° colder than Akyab on the western side of Burma. The rest of this monsoon from N. China is cool though it warms up in contact with the South China Sea[7] (and in turn, cools that sea — hence the fog) and absorbs moisture, some of which is dropped on the Vietnamese coast and mountains from October onwards adding to the rainfall from occasional typhoons. The NE Monsoon is a stronger wind (9-13.5 mph) than the summer monsoon (2-4.5 mph) and it steadily advances to reach Singapore in November and Java in January, bringing rain to windward coasts and to mountains (e.g. the Malayan NE coast receives over 20" in both November and December). Cambodia and Thailand are sheltered by the mountains of Laos and the Vietnams and are drier than the Vietnam coast at this time.

Burma is similarly protected from heavy rains during the northern winter. The winds are mainly northerlies (the left flank of the Indian winter offshore monsoon) and are relatively dry. Mandalay's humidity is 40-60 per cent. in January-February). The high mountains of northern Burma keep out arctic air and mid-latitude depressions but occasional showers come from westerly waves in the atmosphere. Moreover, upper-air streams converge over Burma, with some sinking of the air; thus contributing to the sunnier, drier conditions of the Burmese cool season.

On reaching the equator, the NE Monsoon which has crossed the South China Sea and Malaysia, turns left and becomes the Westerly Monsoon of latitudes 0-10°S (see January map). Where this W.

[6] P. Pedelaborde, *The Monsoon* translated by M. J. Clegg (London, 1963), p. 131.

[7] Hue is 7° warmer than Hanoi in January.


JANUARY
INDIAN WINTER MONSOON
N.E. MONSOON
N.E. TRADES
W. MONSOON
S.E. TRADES
20°
10°
0°
APRIL
N.E. MONSOON
N.E. TRADES
N.E. TRADES
ADVANCING S.W. MONSOON
From Coral Sea
E. MONSOON From Australia

Monsoon converges with the SE Trade Winds from Western Australia, and where it encounters mountains, heavy rainfall results. December-March is the wettest season in Djakarta (43" out of a total of 71").

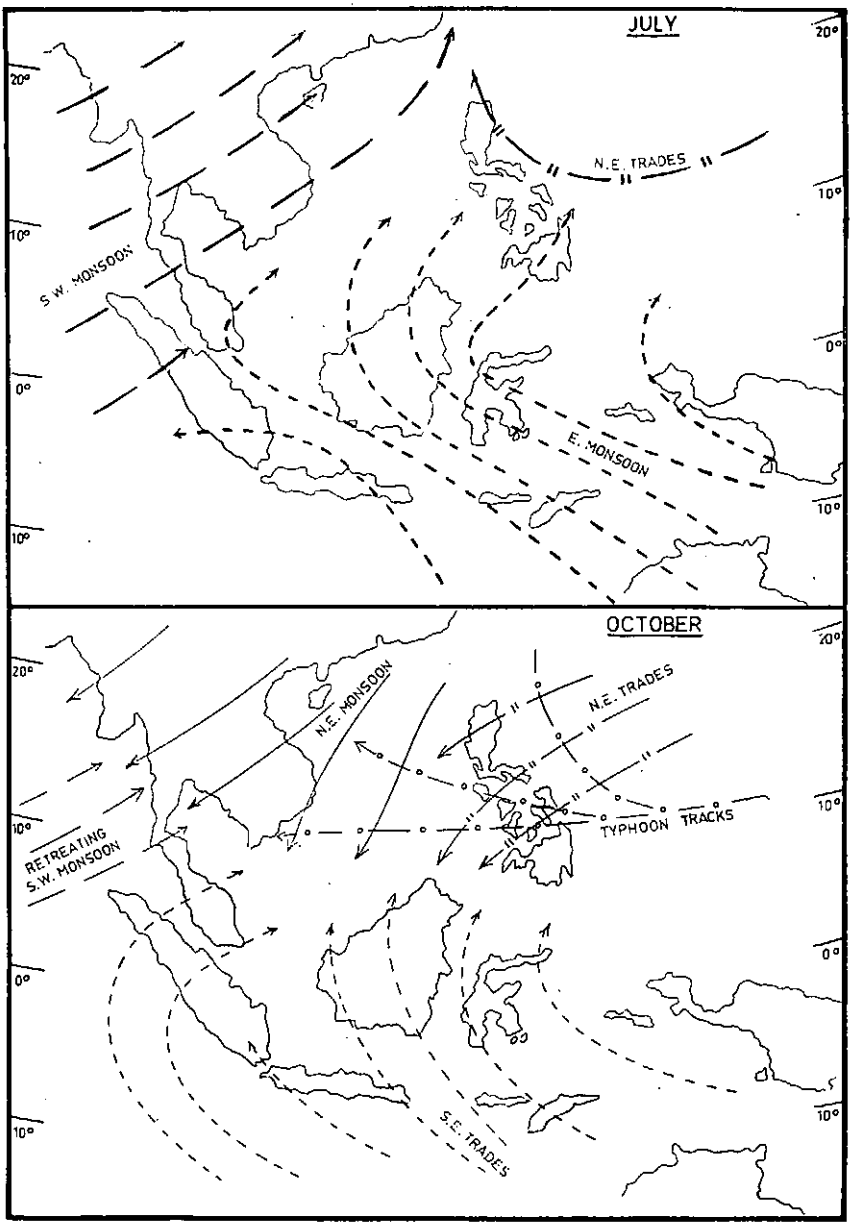
As Asia warms up in the northern spring, the high pressure disperses. Australia is cooling and its air pressures increase so there is very little pressure difference between N. Vietnam and N. Australia. Thus the winds become weaker and more variable in direction locally but their general direction is shown on the April map. The NE Monsoon now only affects the Vietnams north of latitude 15°N and the North-East Trade Winds advance right across to western Malaya. Cyclonic eddies in these winds bring convectional rains from the east into Indonesia. All the world's pressure and wind systems move northwards with (but not to the same extent as) the sun, so the South-East Trade Winds approach the equator. Where they have come from Australia they are relatively dry hence the drier period begins in the islands of southern and central Indonesia but where they have come from the Coral Sea they are humid and the air is unstable so heavy rains fall on the southern side of Papua-W. Irian (where the wettest months are March-April) and on the southern Moluccas (where rain increases markedly in April and May).

Along the Burmese coast the winds have become westerly by April and rains begin: in western Sumatra the South-West Monsoon makes its debut about April and rain increases to the first of the post-equinox peaks associated with the migration of the equatorial convergence.

As the sun passes to the north temperatures increase on the mainland to the peaks of March-April — just before the summer rains. Land and sea breezes become noticeable at this time, providing local relief from heat, but causing thunder-rains in coastal areas generally.

The heat of the northern summer causes air pressures to fall, especially over W. Pakistan and SW Asia. Australia has its cool season and air pressures rise. Thus by May there is a general decrease in pressure from Australia to mainland Asia. The South-East Trade Winds (Indonesia's E. Monsoon) go right across the Equator and swing towards the Philippines (see July map) and the South-West Monsoon of the Indian Ocean makes its way up the Bay of Bengal (reaching S. Burma about 10 May and Calcutta about 30 May) and it also spreads across Indo-China towards Hong Kong. This wind thins out as it goes — in W. Burma it reaches up to 30,000 feet; off southern China it reaches only 10,000 feet[8]. It often swings to the east across the Philippines bringing rain to west-facing slopes and keeping the NE Trade Wind out of the S. China Sea.

[8] C. A. Fisher, *South-East Asia* (London, 1964), p. 33.


JULY
20°
10°
0°
10°
S.W. MONSOON
N.E. TRADES
E. MONSOON
OCTOBER
N.E. MONSOON
N.E. TRADES
RETREATING S.W. MONSOON
TYPHOON TRACKS
S.E. TRADES

The South-West Monsoon is the source of most of the rain of mainland South-East Asia. Where it strikes mountains, and where it converges with the Easterly Monsoon, heavy rain results, humidity increases, cloud is more frequent and temperatures fall slightly despite this being the period of maximum elevation of the sun. Maximum rains seem to coincide with the passage overhead of an east-to-west jet stream at high altitude. The positions of this jet stream and of the line of convergence of the two monsoons change, thus Southern Burma has its heaviest rain in July (Victoria Point 30") but Malaya has it later (Penang 19" in September) as the jet moves south in the autumn.

The speed of the SW Monsoon is about walking-pace. Sometimes it stops entirely and a week or two of dry weather results, to the detriment of local farmers and to the satisfaction of almost everyone else, provided food prices are not affected.

Onshore the rainfall varies with altitude, being greatest between 2500 and 5000 feet, above which the showers are more frequent and longer but less rain is received. To leeward of mountain ranges rainfall is much less, especially in the Central Irrawaddy, Lower Menam and Lower Mekong valleys:

Windward stations in Summer		
Akyab (W. Burma)	183.9"	May-Sep incl.
Victoria Pt (S. Burma)	126.8"	,,
Leeward stations		
Mandalay (C. Burma)	24.9"	,,
Bangkok (S. Thailand)	38.6"	,,
Hué (N. of S. Vietnam)	30.0"	,,

During the northern summer South-East Asia is covered (at lower levels) by air originating in high-pressure areas east of Madagascar and in Australia, and attracted by Asian low pressure.

In the northern autumn Asia begins to cool, the northern hemisphere begins to warm up and there is no marked pressure differences across South-East Asia, so (as in Spring) winds become light and variable, their prevailing directions being as in the October map. Land and sea breezes are noticeable on most coasts, with attendant thunder-rains, and typhoons attack the Philippines and, to a lesser extent, the east coast of the Vietnams. Indonesia is still exposed to the Easterly Monsoon from Northern Australia and Trade Winds from the Coral Sea, and is still fairly dry but during September-October the line of convergence between (a) air from China and from the W. Pacific (north of the equator) and (b) air from the southern hemisphere gradually moves south. By October Asia's winter high pressure is re-established and the NE Monsoon advances south-westwards from China. The NE Trade Wind on its

left flank is temporarily allowed to cross the Philippines into the S. China Sea. The SW Monsoon still blows towards the peninsula but towards a retreating front. Heaviest rainfall at this time is on the windward sides of the Philippines, the Vietnams, Northern Sumatra and SW Java together with the higher parts of Borneo and W. Irian.

By mid-November (give or take a week or two) the NE Monsoon has reached Singapore — bringing heavier rain along its advancing front and along all NE-facing coasts and slopes. It only has to swing round at the equator and provide Indonesia's Westerly Monsoon to complete the annual cycle.

Regional Differences

To summarize, all Malaysia and Indonesia with the exception of Java to S. West Irian inclusive, is hot, rainy and humid all year (except that temperatures are lower on the mountains.) To the north and south of this belt the temperatures of the hotter and cooler months differ slightly more than within the equatorial belt and there is a noticeable drier season — though its place in the calendar varies with windward/leeward siting in relation to the reversing winds and with the humidity of the relevant air masses. Here again highlands are cooler. Five distinctly drier regions are found in rain-shadows: Central Burma, the Lower Menam valley of Central Thailand, the Chi valley of E. Thailand, the Tonle Sap area of W. Cambodia, and the Mekong valley across the Cambodia-S. Vietnam border. In these localities the rain is not only less, but less reliable. Irrigation is necessary but famine is an annual possibility.

Comparison with Australian Territory

Selected statistics (on the next page) show that close correspondence exists between our northern parts and most of South-East Asia. There are no really close parallels with Hanoi's wet-hot summer and maximum humidity in the cool winter. (Cardwell's maximum humidity is in the summer.) The same applies to Hué and Cairns. Neither is there anything quite like the drought of Kupang among places in Australia with similar temperatures and high summer rainfall.

The humidity figures are approximate for the Asian stations and are the lowest and highest monthly averages.

Some Effects of the Climate on Military Operations

As the foregoing discussion has shown, the climate of South-East Asia is by no means uniform and significant differences can be observed as between the equatorial zone and areas to the north and

south, especially with regard to rainfall. It is not surprising, therefore, that military operations are affected, in no small way, by these differences in the climatic environment.

Town	Location	Hottest Month °F	Coolest Month °F	Annual Rainfall Inches	Humidity Range %
Pontianak	W. Borneo	80	78	125.9	77-82
Kavieng	New Ireland	82	80	124.3	82-86
Djakarta	W. Java	80	78	72.1	77-87
Penang	W. Malaya	82	80	109.3	78-86
Manila	Philippines	83	77	79.6	70-86
Rabaul	New Britain	82	81	89.0	77-84
Daru	S. Papua	82	78	82.6	79-84
Rangoon	Burma	87	77	103.0	60-90
Darwin	N.T.	86	77	61.8	55-80
Akyab	W. Burma	84	70	203.8	70-90
Innisfail	N. Q'land	80	66.5	139.1	83-87
Bangkok	Thailand	87	77	56.4	70-81
Saigon	S.V.N.	85	79	79.5	72-86
Thursday Is.	N. Q'land	84	77.5	66.5	75-84
Mandalay	Burma	90	70	35.1	38-79
Normanton	N. Q'land	87	71	37.6	42-72
Hanoi	N.V.N.	83	62	68.6	82-88
Cardwell	N. Q'land	80	65	77.0	79-84
Hue	S.V.N.	85	67	102.0	75-90
Cairns	N. Q'land	82	70	86.4	73-80
Kupang	Timor	80	76	66.3	62-82
Cape York	N. Q'land	81	76	70.1	75-89

In the equatorial zone rain is experienced throughout the year whilst in areas outside the equatorial zone there are marked wet and dry seasons which have an appreciable effect on military operations. For example, troop movements, air support and supply are relatively easy during the dry season but in the wet season many roads are greasy or flooded, movement is difficult across flooded rice fields, rivers are in flood, visibility is poor and air operations are hampered. Generally speaking the most difficult climatic conditions are encountered in the tropical monsoon regions during the wet season, followed by the equatorial monsoon regions.

The actual extent to which climate affects military operations in South-East Asia is far-reaching — much more so than most people would readily imagine — for its influence is felt not only in operational areas but also in areas which may be some distance away. For example, during the present fighting in Vietnam it has been found that the torrential rain during the wet season curtails the unloading of supplies from ships in Saigon harbour. When the rain begins to fall, usually after about 1400 hours each afternoon, holds have to be battened down and this seriously interrupts the unloading of ammunition and supplies.

In considering the influence of climate on military operations, five important areas have been singled out for discussion, namely personnel, equipment, ground movement, air supply and support operations, and amphibious landings.

Military Personnel. — The most important military consequence of climate is probably its effect on the efficiency and morale of military personnel. Persons who enter the tropics from the mid-latitudes find the combination of heat and high humidity very difficult to endure until they become acclimatized.

As Neville Brown points out 'if men are sent from a truly temperate climate to a tropical one, the extent and variety of the physiological adjustments required are quite surprising. The throughput of the heart in a given time trebles as the volume of blood markedly increases and the rate of flow nearly doubles; meanwhile the capillary network near the skin will expand to help absorb the extra volume; the lung beat will also go up. This whole process of circulatory adaptation only takes about seven days, but the retraining of the sweat glands so that they dilute their salt concentration, raise their maximal and sustained flow rates, and become able to produce fluid more readily, takes something of the order of two to three weeks. The times usually given for overall acclimatization correspond closely to those for circulation and sweat gland adjustment respectively, being a week to ten days for a high degree of adaptation to be achieved and three weeks for adaptation to be completed. Until it has occurred skin and body temperatures, blood pressure, and heart beat will be too unstable and, on the average, too high. In consequence the soldier will be much too prone to physical and mental fatigue.'[9]

Although efficiency is restored in a relatively short period,[10] military personnel may suffer considerable discomfort, especially in the wet season when they have to cross flooded rice fields and to use flooded weapon pits. The difficulty of keeping clothing dry may affect morale, whilst soldiers may suffer from skin diseases, such as those arising from the use of wet footwear.[11]

Military Equipment. — The second broad effect of climate concerns its impact on military equipment. Through its influence on the natural vegetation and on types of man-made landscapes in

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[9] N. Brown, *Strategic Mobility*, London 1963, pp. 22-23.

[10] When interviewed recently in South Vietnam 1st Lt. Donald Wolfe pointed out that 'It really takes a man two months to get acclimatized to this . . . place. When I took out my first patrol we had three heat cases in the first three clicks (Kilometers) Now they could travel three times that far with triple the load'. R. Armstrong, Vietnam, *The Saturday Evening Post*, March 25, 1967, p. 72.

[11] This problem was stressed in the reported interview with 1st Lt. D. Wolfe. 'The monsoon rain was beating down on his tent and blowing in gusts through the open sides. "Now I know with this rain I am going to get a lot of immersion foot . . . So I am going to be spending half my time making them air their feet off duty and change their socks when they get wet" '. (R. Armstrong.)

farmed areas, climate indirectly affects the general nature of the warfare and the choice of equipment, especially the means of transport. The nature of the equipment having been decided, special attention must be directed towards the hazards posed by the climate as regards the deterioration of equipment, clothing and footwear. This is because South-East Asia is one of the regions where equipment is most subject to rusting and where clothing and footwear are most subject to rotting and fungoid growths.

As Peltier and Pearcy stress, 'Tropical regions are those with high rates of rotting and rusting. If we recognize that the rate of natural chemical reactions varies directly with the absolute temperature when in the presence of moisture, then these must be the regions of greatest chemical deterioration. Applying this principle to biological conditions and a common humidity of 70 per cent. or more, we must also see the humid tropics as the regions of greatest assault by fungus.'[12] In addition, electrical equipment must be protected from dampness and working parts from rust and dust. Owing to the high temperatures special precautions must also be taken in the storing of ammunition and explosives.

Ground Movement. — The heavy rainfall experienced in the region obviously affects the nature of the ground and poses many problems for the movement of vehicles, armour and artillery. Thus during the wet season tracks in mountainous areas may be subject to frequent washaways and landslides, whilst the widespread flooding of the plains and deltas may mean that movement along tracks and across country is virtually impossible, except for tracked vehicles, and even these may frequently need swimming capability. Under these circumstances local waterways may play a valuable part in helping to maintain mobility.[13]

The flooding of ground can make the deployment of artillery very difficult. A vivid example of this is to be found in the following description of the establishment of a gun position in Sabah during the Indonesian confrontation.

'The gun site, as the troop found it, was in an appalling state. The sappers had done a magnificent job clearing the jungle, but the bulldozer had churned up the ground and torrential tropical rain had turned it into a quagmire. Pumps running continuously failed to reduce the surface water . . . It took two days to move the guns 75 yards to their platforms . . . Once in position the guns started to sink into the mud. Even after log platforms had been built under their wheels the guns continued to sink until they rested on their axles in the mud.'[14]

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[12] L. C. Peltier and G. E. Pearcy, *Military Geography*, New Jersey, 1966, p. 131.
[13] See for example, R E. Mack, 'A Riverine Incident', *Infantry*, May-June, 1967.
[14] C. P. Masters. 'With a Medium Troop in Sabah,' *Australian Army Journal*, April 1967.

Air Supply and Support Operations. — The ground and road surfaces being largely untrafficable during the wet season, movement of troops, arms and supplies by air acquires tremendous importance, especially by craft needing very short runways or none at all, but even air supply runs and heli-borne troop transport may be seriously curtailed during the wet season. Furthermore, close air support may be hampered by low cloud and heavy rain, and the Americans welcomed an untimely break in the winter monsoon in December 1967 to renew attacks on the Hanoi area. On the other hand, however, the use of radar today means that aircraft on bombing missions (e.g. those over North Vietnam) are not so likely to be affected by rain or cloud. Thus one recent newspaper report stated that United States aircraft equipped with electronic target seekers had struck through a blinding monsoon storm at key transportation links near Haiphong.[15]

Amphibious Operations. — Finally, it should be noted that the weather will have a vital bearing on the success of amphibious operations. The whole question of amphibious operations is by no means academic as even in the current Vietnam conflict the United States has found it necessary to mount several amphibious operations along the coast of South Vietnam.

In the first place the state of the sea for a considerable distance from the landing site must be taken into account. This is especially true in waters around the Philippine islands where typhoons can whip up high waves which can damage ships and delay landings. For example, Admiral Halsey's Third Fleet suffered heavy damage from a typhoon whilst providing air support during the American invasion of Mindoro in December 1944. '...Halsey's planes had again struck Luzon on December 16 and the carriers had started retiring eastward to refuel in preparation for the second series of attacks beginning on the 19th. Late on the morning of the 17th a vicious typhoon began lashing the Third Fleet and did not blow itself out until the evening of the 18th . . . The typhoon through which the Third Fleet had sailed resulted in the loss of about 790 men. It also sank 3 destroyers, wrecked 200 planes and damaged 28 ships, 9 so severely that they were out of action for weeks.'[16] Similarly, unfavourable weather conditions seriously hampered discharge operations following the American landings in the Lingayen Gulf in January, 1945.[17]

Amphibious operations are probably not more hazardous overall than in, say, Western Europe where the severity of storms at sea is usually less than that of the typhoon, but where the frequency of storms is greater and the sea is seldom as calm as it normally is in the tropics.

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[15]. *The Canberra Times*, 6 November 1967, p. 5.
[16] R. R. Smith, *Triumph in the Philippines*, The War in the Pacific, Washington, 1963, p. 48.
[17] R. R. Smith, pp 124-125.

The Neutrality of Climate

In conclusion it is perhaps worth remembering that the problems for warfare posed by climate are politically neutral. They are there, in South-East Asia as elsewhere, to be either overcome or circumvented according to the type of warfare each side decides to prosecute. If, as in the Vietnam case, one side uses a 'now I'm there, now I'm not' technique, employing personnel long accustomed to enduring the climatic elements and who can mount significant firepower for short periods without recourse to much mechanical transport, whereas the other side (well supported industrially) adopts all the mechanical aids it can contrive, then, probably the climate works to the advantage of the former.

However, if the communist powers themselves entered the Vietnam conflict, so that the war became one between industrialized nations domiciled outside the tropics, then the climate and its problems would provide advantage only to the side which displayed the greater technical ingenuity, or whose troops had the greater morale-sustaining incentive to fight. □

AAJ MONTHLY AWARDS

The Board of Review has awarded prizes for the best articles published in the October, November and December 1967 issues of the journal to:

October: Major E. M. McCormick ('Some Thoughts on the Army in Papua-New Guinea') $10.

November: Lieutenant-Colonel J. A. Warr, DSO ('Cordon and Search Operations in Phuoc Tuy Province') $10.

December: Lieutenant-Colonel A. Argent ('A Photo and A Story') $10.

DEFEAT IN THE EAST: The Mark of Mao Tse-Tung on War, by Michael Elliott-Bateman. (Oxford University Press, London, 1967, $6.35.)

Reviewed by Major R. J. O'Neill, Lecturer in History, Royal Military College, Duntroon.

THE frustrations and seeming impasses of counter-insurgency warfare for the military strategists of the West have coincided with a spate of authors who are prepared to apply themselves to military problems. The result has been the appearance of a great number of books on guerilla warfare, some of which are very good, such as Colonel John McCuen's *Counter Guerilla Warfare,* while others are not so good. The content of these books ranges from formulae for defeating the insurgents to claims that they cannot be overcome by military action, and the good books and the bad are widely distributed across this spectrum of opinion. Consequently one looks at each new book in this field in the hope that it might resolve some of the puzzles and doubts created by the contradictions in the writings which have already appeared.

Michael Elliott-Bateman, a British artillery officer who recently resigned his commission to become a lecturer in Government at the University of Manchester, has written *Defeat in the East* 'to urge reasons for a radical revision of the methods of warfare that have been employed by the British, French and Americans in South-East Asia, in the hope of reversing the disastrous trend towards the defeat of Western forces in the East.' In keeping with this modest aim, he confesses 'I have come to realise that people like Lawrence and Wingate stumbled across the same truths that I have stumbled across, but either because they could see no definite historical basis of their experience or because of the urgency of war they were unable to leave behind direction for their ideas to flow and thus develop.'

While *Defeat in the East* contains much valuable analysis of guerilla warfare and the theories of Mao Tse-Tung, Elliott-Bateman has based his arguments on some rather questionable premises, typified by the above quotations. Bateman views the causes of Western discomfiture as military in the sense that a different

approach to military tactics would greatly relieve Western distress. Since the approach of Mao to warfare is different to that of the West, he deduces, it must be better suited to both the aims and the armies of the West than are current notions. If one accepts that the causes of Western failure are military then there is much to be said for examining Elliott-Bateman's deductions. However, the truth of this premise is far from self evident and when one examines the major debacle for Western arms in the East, namely the Indo-China campaign of the French, it is difficult to avoid the conclusion that the main factors in the French defeat were political rather than military.

The French Army cannot be excused the tactical ineptitudes of operations such as those of Group Mobile 100 or the conduct of the battle for Dien Bien Phu but it ought to be given the credit for the success of its unconventional operations, the partisan groups deep in Viet Minh territory, the psychological warfare teams and the resettlement of uncontrolled communities in Cambodia. The French had some very good ideas and they achieved some notable successes with them but lack of sufficient men to make these methods decisive was the chief problem of the French High Command. This is a political problem whose roots lay in metropolitan France — army recruiting was relatively slow and the Government would not permit the use of conscripts in Indo-China.

The task of General Westmoreland in Vietnam has not been lightened by the limitations of manpower which he has had to observe. Nonetheless, within those limits, American operations have achieved a good deal more military success than those of the Viet Cong. It is curious that Elliott-Bateman lumps the British in together with the French and Americans as examples of defeated nations. Surely the British performance in Malaya and Borneo entitles them to some higher status in the realm of military capability.

Elliott-Bateman makes much of the concept of doctrinal superiority as a means of ensuring military victory and thereby tends to beg the question. Were the successes of Giap in 1953-54 due more to superior doctrine or to the ability to concentrate his troops with greater freedom than the French? Had the French employed a Maoist doctrine, could they have won the campaign? These are the questions which need to be answered before proceeding to claim that the doctrine of the people who happened to win in Indo-China is the cure for an ailing Western military capability.

To overcome the problems of imposing the concepts of Mao on an army which has been recruited from a democratic society, Elliott-Bateman suggests a formula which creates a sharp division between the army and the nation. As an example of a superior system, he quotes from Jean Larteguy's *The Centurions*. '"Radio Raspeguy" (a

battalion loudspeaker system) lays particular emphasis on everything that can make a soldier disgusted with civilian life. The outside world is presented as vile, corrupt and degraded; power as being in the hands of small-time crooks.' While he does not claim that this ideology is the only form applicable to modern armies, it is nonetheless the logical extreme to which implementation of Elliott-Bateman's ideas could lead. An army which has to depend on this outlook to defeat communist insurgency is very likely to create more problems for its nation than it solves. Despite these criticisms *Defeat in the East* is well worth reading. Perhaps the author would have achieved his purpose better with some moderation of his views. □

BEST ARMY STORIES, edited by Andrew Graham (Faber and Faber, 1967, 21s sterling.)

Reviewed by Mr. J. T. Laird, Senior Lecturer in English at the Royal Military College, Duntroon.

HE is a brave editor who would seriously defend the claim that he has given his readers the 'best' stories in a particular field and Andrew Graham, despite the title of this anthology, wisely inserts what is virtually a disclaimer when he states that 'no one could guarantee that a collection of "best army stories" is better than all others'. Nevertheless, he goes on to assert that the stories in the volume 'all have something first-rate about them.'

A reviewer may still quarrel, with justification I believe, with this last statement, for by no means all the 23 stories in this collection seem to me 'first-rate', if normal critical standards are invoked. Some of the stories, indeed, seem pretty trivial — for example, M. Malgonkar's 'They Always Call You "Old Boy" ', R. H. Mottram's 'Poor Old Xenophon', and George Foster's 'Getting Noticed'; while a number of others — notably Conan Doyle's 'A Straggler of '15' and Grigory Baklanov's 'The Foothold' — although more substantial, still seem to fall considerably short of excellence.

The richly symbolic extract from Thomas Hardy's *Far From The Madding Crowd* is, admittedly, one of the better pieces of writing in the collection, but a question that intrigues me in relation to it is; what is it doing here in this company? And again, I cannot help wondering why the editor preferred the opening Boer War incident in C. S. Forester's novel *The General* to one of the many later episodes relating to World War I, which are surely far more significant in view of the book's basic thesis that England had the wrong sort of military leaders in this later war.

These reservations having been expressed, I would be happy to agree that there are many stories in the volume that do have 'something first-rate about them', some of them being genuine short stories, and others extracts from novels or personal narratives.

There are two stories about the Napoleonic Wars, for example, that belong to this order of excellence. The first, 'The Russian Garrison' by de Vigny, is a description of a brutal silent massacre of sleeping Russian troops, executed by French troops using swords, bayonets, and rifle butts. The second, an extract from the end of the Austerlitz section of Tolstoy's *War and Peace,* is a description of the great spiritual crises in the life of Prince Andrew, when Andrew, lying wounded and bleeding and only partly conscious on the field of battle, dimly realizes that Napoleon — his hero — is speaking about him. But Andrew now suddenly understands how insignificant Napoleon has become, in comparison with 'that lofty infinite sky with the clouds flying over it', which symbolizes non-materialistic glory.

Two of the stories of the American Civil War impress by their authors' skilful handling of the macabre and grotesque elements. Stephen Crane's 'The Upturned Face' describes two young officers nervously burying their friends while the battle still rages; Ambrose Bierce, in 'An Occurrence at Owl Creek Bridge' describes the hanging of a spy from a railway bridge. Although the ending is melodramatic, the heightened imagery of the story aptly reflects 'the preternaturally keen and alert' physical senses of the man at the moment of death.

Kipling's tale 'In the Matter of a Private' is a humorous, but unsentimental account of one of the more extreme effects that the hot Indian summer weather could have on the frayed tempers of the British troops.

A trio of stories concerning World War I is also worthy of attention. The extract from *All Quiet on the Western Front* vividly illustrates two of its author's favourite themes — the gulf of misunderstanding between the front-line troops and the people on the home front, and the need for the front-line soldier to cultivate apathy and indifference if he is to preserve his mental balance under the conditions of prolonged trench warfare. In the extract from *Sherstons Progress* Sassoon describes in a vividly detailed and honest way his sensations and reflections in France during the last few weeks of the war admitting, in the process, that his reckless feats of gallantry were necessary to him, since they were the only way he could keep going. The less well-known *A Passionate Prodigality,* by Guy Chapman, offers an incisive description of the mood of boredom, frustration, and cynicism that pervaded the limbo period in France when the war was over but peace had not begun.

A touch of the unusual is provided by the extract from *Long the Imperial Way* by Hanama Tasaki, in which the ways of thought of Japanese soldiers are described — their reverence for the Emperor that can overcome fatigue and fear, and the sense of honour that leads a lieutenant who has lost his sword during a retreat to commit hara-kiri.

The only two World War II stories in the volume are both taken from foreign authors, a reasonably just indication of the relative scarcity of outstanding works in English about this conflict. Of the two stories, the one from *The Invisible Flag* by Peter Bamm, a German Medical officer, is, I think, the better. □

LESSONS OF THE BOER WAR

The Boer War has been of great value in many ways. Our officers fall naturally into two classes: those who have seen service against savages and are prone to see the Asiatic or African in every opponent, and those who have perhaps seen nothing of war, but are inclined to work on more or less hard and fast European lines. The bulk of regimental officers have merely acquired the routine tactics practised on the square, the drill field and, it must be confessed, at manoeuvres.

The Boer unfortunately is neither an Asiatic, an African nor a European; he is ignorant of routine and knows even less of manoeuvres. He seems even to take pleasure in flouting expert opinion. Witness the employment of guns singly, the abuse of heavy fortress guns in the field and the adoption of the Pom Pom. The Boer is merely a man of rude common sense, endowed with much self reliance. 'Each man for himself and the whole will prosper' might be their motto. Their common sense lends them almost invisibility in taking up a defensive position. Our men are either too reckless, too lazy, or too ignorant to take cover properly: they are, for instance, inclined to herd together where there is perhaps only good cover for half their number. The British soldier does not crawl on his hands and knees to get into a good position nor does he understand that oblique fire is often better than frontal. To light a fire or a pipe at night in full view of the enemy does not appear criminal to him at all nor, at times, to his leader. These faults must be laid at the door of our Training. 'Uniformity' is the curse of our system, at least at home. Each company must be the counterpart of the others and thus all initiative and the practice of commonsense is destroyed. Superiors too frequently interfere in and assume the responsibility of their juniors. This is particularly noticeable among the NCOs, who can carry out a definite order but are almost without exception unable to act for themselves.

Almost the chief of our many shortcomings was the want of appreciation for the lie of the ground. Once over ground should be sufficient to enable any man to find his way back and to identify landmarks, whilst the points of the compass should be ever-present in his mind. It is a melancholy fact that only two NCOs in my company were able to go the rounds at night and be certain of finding every sentry and their own way back to the picquet. Nor is this failing confined solely to our NCOs!

— Major-General Sir John Gellibrand (in manuscript at the Australian War Memorial).

Letters to the Editor

Three Articles

Sir,—The three articles appearing in the AAJ 224 Jan 68 could well be voted the best selection the journal has offered. All are worthy of comment as they say something that needs to be said.

Keogh's 'The Study of Military History', in its brutally frank approach, should greatly assist officer students and instructors. There is need, however, to differentiate between the study of war and the study of a particular campaign.

The study of war demands a study of the history; of the political and sociological conditions of the nation engaged. The campaign needs knowledge of the weapons used, the logistic system and the background of the commander in the field; without which we are back to applying, mechanically, the Principles of War, (which Keogh rightly condemns) in a present day concept of the possible.

Vardanega's 'Simplifying Logistic Support in the Australian Army' contains nothing new. (This subject has been given the rounds of the messes for the last 10 years). It is a standard piece of 'Military Writing' suitably sub-paragraphed.

The title is incorrect. It should be 'The Reorganization of the Staff System-Proposals'. It also needs a resumé of the history of the growth of the staff to bring to light the reasons for current shortcomings and therefore the need for change.

The system, as we know it, came into being about the time of the Boer War. It was perfected in World War I and in its relation to the British Empire requirements and horses was much more suitable than the continental system.

In World War 2 the system was suitably patched to meet the needs of a mechanized army. In the higher echelons of procurement and maintenance, to which Vardanega devotes so much space, the system failed. (The Winter Report 1943 makes good reading).

What is needed is a complete review in the light of modern technology. The computers now installed in Canberra will ultimately force the rationalization of procurement, holding and distribution, for which Vardanega pleads. It is a pity he finds it so necessary to reassure the Military Board that their positions would not be endangered and to commiserate with the engineers over their possible loss. One thing should be clear in our minds in such discussion, that the 'best traditions' are often those unassociated with organization or function.

Lastly the article by Lt Col Jones on 'Tradition & Reality'. This is the type of thoughtful article that officers have refrained from writing (or getting into print) in the past. It should be a standard text for our Officer Schools, for the ignorance of the young (and not so young) is notorious.

For far too long military thinking in Australia has been overshadowed by the necessity of producing Platoon Commanders to take their place in Imperial Expeditionary Forces. It is to be hoped that the traditions of courage and action that such forces of the past gave to the Australian Army will be those most treasured in the future.

CRE N Comd
Victoria Barracks
Brisbane

G. F. Mullins Lt-Col (RL) RAE □

* Lieutenant-Colonel Vardanega replies: When Colonel Mullins suggests that the subject of my article has been given the rounds of the messes for the last ten years, I assume he refers to the need to rationalize the functions of RAE (Tn), RAASC and RAAOC. I agree with him in that respect. However, my paper makes specific proposals in other fields, and also suggests ways and means which go far beyond the realms of general mess conversation.

I do not agree that the title is incorrect, because the article does not deal with the Staff system, as such. It is confined to those aspects with a direct bearing on logistic support. The Staff system encompasses a vastly more complex area than merely logistics. Additionally, I cannot agree that the 'Logistic System' failed during the 1939-45 war: That war was fought over such a variety of terrain and combat conditions that it became necessary to make many readjustments in matters of detail at lower echelons to suit local conditions. Yet the instances of failure, or near failure, of administrative support in the field were few indeed, and in the Australian army these were probably limited to the campaigns in Papua/New Guinea when there were instances of some relatively poor logistic support. However, my paper relates to the army today, not the army of a generation ago.

If I believed that the Military Board structure was unsuited to modern conditions, I would have said so. The need for a readjustment of responsibilities is clear. However, it is equally clear to me that higher direction of policy should be grouped as I have suggested, with clear separations of functional nature.

The army is not like a suburban club that can alter its constitution at will, with only narrow implications. It is a complex and costly structure, and every major change in direction involves a

temporary slowing down in response and readjustments which can extend over a number of years.

So far as tradition is concerned, I made it clear that traditions should never be allowed to impede progress. On the other hand, the army would not be half so effective as it is, if it were only half as human as it is.

Army Headquarters
CANBERRA.

R. Vardanega, Lt-Col. □

Memory Aids

Sir, — Mr Orr of Chicago was probably an American and spelt as an American. He therefore wrote [AAJ March 1968 p.45, last line] 'rivaled', not the English 'rivalled'. The value of pi in the 14th figure calls for a 7 (letter word). I fear someone somewhere thought to correct Mr Orr's spelling, for I feel sure he did not make a mistake in the value of pi.

Mosman Terrace,
Mosman Park,
W.A.

C.M.L. Elliott, Brig, OBE, (RL) □

British Services Logistics Computers

Sir, — Having read the article, British Services Logistics Computers, (AAJ 225 Feb 69) by Lt Col A. E. Limburg, CVO., I noticed one point which I consider to be a possible misprint.

It concerns the ICT 2400's at Chilwell and Donnington and their storage capacity.

Working, as they do, with a number system, Base 2 or Binary operation, the magnetic-core computer store would have capacity of 16384, 32768 or 65536 computer words.

These figures represent 2^{14}, 2^{15}, and 2^{16} respectively.

If I am correct the figure should read 32768 (2^{15}), not 32678 (2^{15}) — ($2^{6} + 2^{4} + 2^{3} + 2^{1}$)

I could quite conceivably be wrong but would be interested in your reply.

6 Sig Regt,
Watsonia Barracks,
Macleod,
Victoria

W. C. Brown, Lieut □

Lieutenant-Colonel Limburg advised that Lieutenant Brown is correct in that the figure should read 32768 — *Editor*