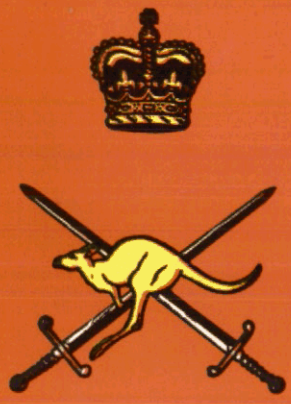


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16 July 2014

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AUSTRALIAN ARMY JOURNAL



NO. 99
AUGUST
1957

Notified in AAOs for 31 August, 1957

MILITARY BOARD

Army Headquarters
Melbourne
1/8/57

Issued by Command of the Military Board

ASW Knight
—

Distribution:

The Journal is issued through RAAOC Stationery
Depots on the scale of One per Officer, Officer
of Cadets, and Cadet Under Officer.

AUSTRALIAN ARMY JOURNAL

A Periodical Review of Military Literature

Number 99

August, 1957

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VICTORIA BARRACKS, MELBOURNE

AUSTRALIAN ARMY JOURNAL

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The AUSTRALIAN ARMY JOURNAL is printed and published for the Directorate of Military Training by Wilke & Co. Ltd. The contents are derived from various acknowledged official and unofficial sources, and do not necessarily represent General Staff Policy.

Contributions, which should be addressed to the Director of Military Training, Army Headquarters, Melbourne, are invited from all ranks of the Army, Cadet Corps and Reserve of Officers. £5 will be paid to the author of the best article published each month, and £40 to the author of the best article published during the year.

THE PHILIPPINES

AUSTRALIA'S NORTHERN FRIEND

Alejandro C. Sicat

Associate Editor, *Philippines Armed Forces Monthly*

THIS article is an attempt to present the Philippines, figuratively, in a nutshell, as a means of promoting understanding of a nation which stands with Australia in a common camp. Not claimed to be an exhaustive work, it nevertheless etches a comprehensive, general outline of the Philippines and its people.

General Description of Country

Composed of 7,100 islands, of which roughly one-half remain uninhabited, the Philippines is as big as the British Isles and Ireland combined. It lies north of Australia, and is separated by narrow water from Formosa in the north, and from Borneo and Indonesia in the south. Its coastline covers a length of 14,700 miles, about twice that of the United States. The country is endowed with an equable tropical climate of dry and wet seasons, and divided into three main parts—the northern land mass of Luzon, the Visayas in the middle, and Mindanao nearest to Borneo in the south. Tall mountains—Sierra Madre, Zambales, Caraballo, etc.—frame the country, punctuated

here and there by volcanoes, active and inactive, lakes, turbulent waterfalls, rivers and hot springs, and dense forests clogged with giant Lawan trees and entangling tropical vines. The terrain is rugged and stony near the mountain frames, but generally level in the interior, the rice bowl and sugar plantations, which are fertile and verdant. The country is said to be the pearl of the Orient seas, where the Philippine Deep, world's second deepest water, is adjacent to Mindanao.

Manila, in Luzon, is the capital; Gaguio City, up on the northern mountain, the summer capital. Other

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big cities exist, among which are Cebu, Bacolod, Roxas, San Pablo, Zamboanga, Quezon, and Pasay.

Manila is approximately 1,000 years old as a settlement, and about three centuries old in its metropolitan form. Ancient buildings, which include Malacanang Palace and the moss-covered churches and schools—towering mementoes of an epochal past that left benefits despite heart-aches—survive. The glorious walled city within the city of Manila lies ruined, a victim of Japanese and American bombs. Manila, touched as it had been by almost all civilisations, by the Oriental and the European, by the Anglo-Saxon and the American, is a complexity of moods and motley of looks. It is at once Madrid, Washington, Melbourne, Rome and Hong Kong in appearance.

Thousands of municipalities exist in the country of more than 50 provinces, which each has its own capital. There are 18,500 barrios (villages).

Its People

Filipinos number 22,000,000, excluding the aborigines and the other mountain tribes. In Manila live 2,500,000 people, mostly office and factory workers. Aliens, both Westerners and Asians, abound, the immigration policies being relatively liberal.

The Filipinos may be classified into Ilocanos, who live in the northern provinces; Tagalogs, Bicolanos, and Pampangos, in Central and Southern Luzon provinces; Visayans in the provinces of the Visayas; and Muslims, in Mindanao.

While the people have their respective dialects, and hundreds of

minor dialects exist, they have agreed to consider Tagalog as the national language. English and Spanish are secondary national languages. Spanish is widely spoken by the old generation of Filipinos, now generally grandparents. A number of newspapers in Spanish cater to them, as do the many dailies and periodical publications in English for the younger Filipinos, who generally speak that language, the official tongue of the government and the schools, where Tagalog is taught alongside Spanish, French, Latin and other foreign languages.

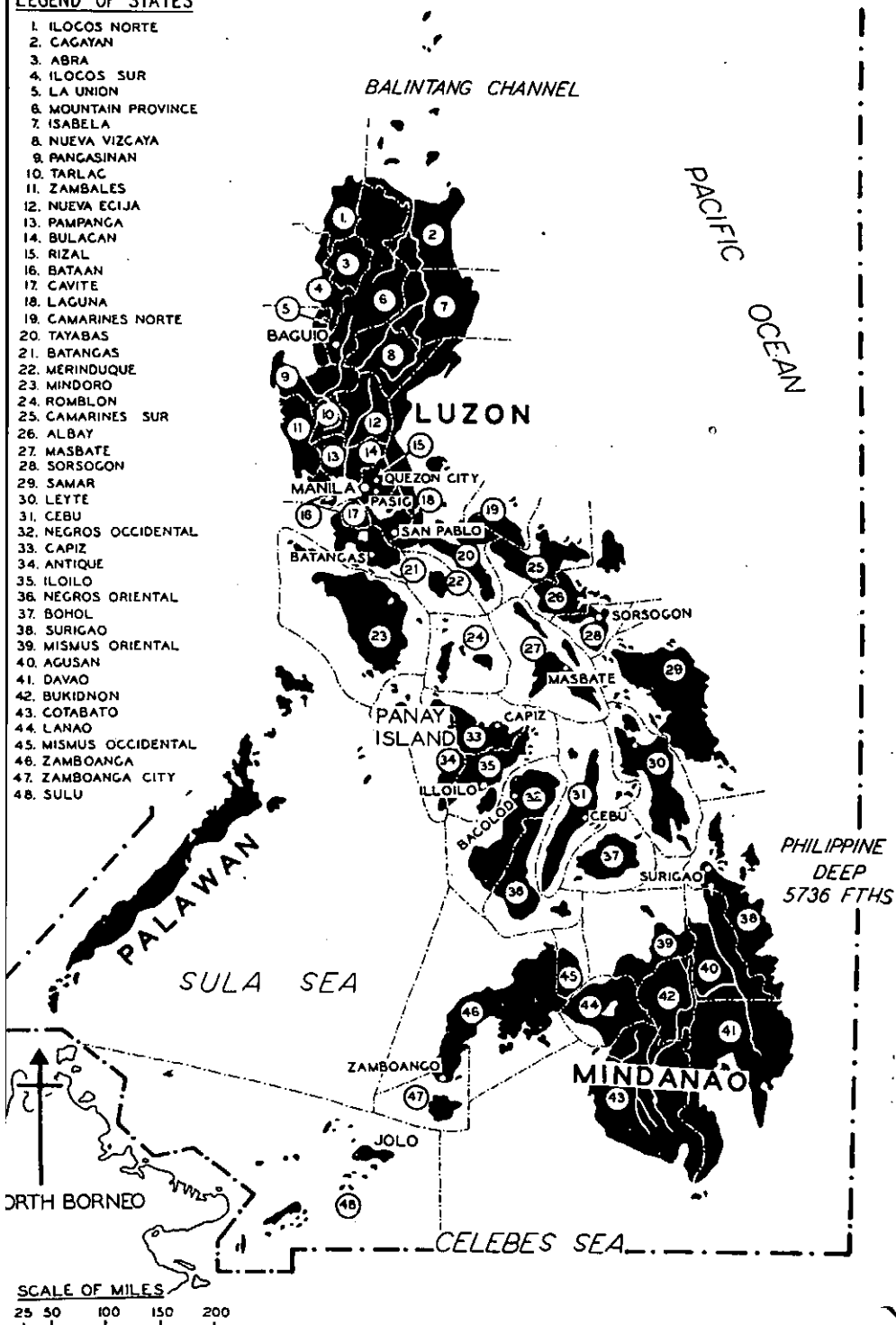
A national anthem, born alongside the sun-and-stars flag during the revolution 60 years ago, is sung in its Tagalog and English versions, often followed on ceremonial occasions by shouts of Mabuhay (Long live). The Sampaguita is the national flower, white, small and fragrant; the Narra tree, hard and durable, the national wood. The Barong Filipino, made of a thin, luminous and well-decorated fabric, is the national shirt of the men, while the mestiza dress, colourful and liked by Westerners, is the national costume of the women.

It is hard to pinpoint the typical Filipino. A Filipino is either partly Chinese, partly Indonesian, partly Malayan, partly Spanish, partly Indian, partly American, or partly a mixture of these and other racial stocks. The ordinary Filipino is almost cosmopolitan in appearance, and can pass as another national. Complexion ranges from the dark brown to the light colour of the Westerner. The people, Asian in prejudice, Western in outlook, are unique in the fact that they and their civilisation are a cross-section of East and West.

THE PHILIPPINES

LEGEND OF STATES

1. ILOCOS NORTE
2. CAGAYAN
3. ABRA
4. ILOCOS SUR
5. LA UNION
6. MOUNTAIN PROVINCE
7. ISABELA
8. NUEVA VIZCAYA
9. PANGASINAN
10. TARLAC
11. ZAMBALES
12. NUEVA ECUIJA
13. PAMPANGA
14. BULACAN
15. RIZAL
16. BATAAN
17. CAVITE
18. LAGUNA
19. CAMARINES NORTE
20. TAYABAS
21. BATANGAS
22. MERINDUQUE
23. MINDORO
24. ROMBLON
25. CAMARINES SUR
26. ALBAY
27. MASBATE
28. SORSOGON
29. SAMAR
30. LEYTE
31. CEBU
32. NEGROS OCCIDENTAL
33. CAPIZ
34. ANTIQUE
35. ILOILO
36. NEGROS ORIENTAL
37. BOHOL
38. SURIGAO
39. MISMUS ORIENTAL
40. AGUSAN
41. DAVAO
42. BUKIDNON
43. COTABATO
44. LANAO
45. MISMUS OCCIDENTAL
46. ZAMBOANGA
47. ZAMBOANGA CITY
48. SULU



About 60 per cent. of the people are Catholics, who have their thousands of centuries-old churches. Protestants, divided into several sects, are about 20 per cent. The remaining 20 per cent. are Mohammedans, residents mostly of Mindanao, where they start their occasional pilgrimages to Mecca.

Literacy is conceded as one of the world's highest, owing to compulsory education and Filipino interest in schooling. The education budget would have been the biggest if not for the abnormal post-war conditions that shifted emphasis to defence. In Manila are counted some eight large universities, including the four-century-old University of Santo Tomas, a dozen colleges approaching the stature of universities, half a dozen technology institutes, another half dozen specialising on the teaching of law, and countless seminaries and vocational academies. Far Eastern University, one of the biggest, records a semestral enrolment of some 50,000 students for its different faculties, rivalled by the University of the Philippines, which offers scholarships to Asians and exchange professors and students. Standards of education are considered high, since the thousands of professors, mostly high authorities in the public service, have each attained his professorial status often only after achieving doctorate and masters degrees in the Philippines and Western countries.

The result is an excess of professionals, especially teachers. A man is no longer considered of high educational attainment unless he has a string of degrees from local and foreign universities. Even army officers go to school at night to enhance their education and keep up with the

trend. Doctors are also becoming too many. The government encourages volunteer doctors and nurses to serve in South Vietnam or to do resident work in hospitals in the USA.

The Philippines is a country of traditional religious processions and feasts replete with pageantry. Horse racing, cock fights and, lately, bull fights becoming popular, are forms of entertainment. Night life, especially in Manila, which surcharges with night clubs, floor show restaurants, and theatres open even on Sundays, and showing local pictures and the latest from Hollywood, is exciting. Live shows are shown by the Manila Grand Opera House, and concerts and ballets are held in the theatres of universities.

Filipinos, like Australians, are art-lovers and at least several coveted paintings made by Filipinos before the present century hang in the art galleries of Europe. An Australian will feel at home in the Philippines and recognize his own country in Manila when he sees a game of football at the Rizal Memorial Stadium, though boxing and basketball are the famous sports. So will he see his civilisation when he finds the cinema houses with such names as Capitol, Lyric, State, Ideal, Avenue, Times, Globe, and Majestic, among others, and daily newspapers like the Manila Times, Manila Chronicle, Philippines Herald, Evening News, and Daily Mirror.

General Historical Background

Historians claim that the Philippine Archipelago was once either attached to the Australian continental mass, or a part of a vast Pacific continent similar to the mythological Atlantis lost beneath the waves.

Many questions remain unanswered, among them: Where did the mountain Negritos, who resemble the Australian aborigines, come from? Were the people in the remote regions of Mindoro and Mindanao a white tribe? Was the Philippines in ancient times called "Ophir," from which King Solomon imported his gold supply? Is it true that Borneo and the Philippines were once an independent state under an imperial Philippine family which claimed descent from Philip of Macedon? Is it equally true that Marco Polo, Mohammed, Alexander the Great, and the legendary Sinbad of the Arabian Nights, were all, in their respective times, in the Philippines?

Filipinos of ages past were literate, but early church missionaries, in their profuse zeal to supplant local religion and civilization, destroyed the native literary works that could shed light on early Filipino history. George A. Malcolm once said that one Spanish priest in Southern Luzon alone boasted about having destroyed more than three hundred scrolls written in native characters. Thus modern scholars are having a hard time piecing together surviving ancient writings, some of which are found as far away as Spain and America. And, at present, many Westerners are still fond of photographing the aborigines and saying to their folks at home that these are the typical Filipinos, just as they often parade Australia as a land only of kangaroos.

Historians divide Philippine history into the pre-Spanish, Spanish, American, and present periods.

Pre-Spanish Period

Many kinds of people, including

Arabs, migrated to the Philippines. A nation formed. Proof of this is the fact that when the Spaniards came, they found Manila a thriving settlement ruled by a royal family boasting of descent from Alexander the Great and connection with the Shri-Vishaya and Madjapahit Empires.

The Mohammedans of Jolo, whose sultanate exists to the present day, and some of whom write in Arabic, claim that King Alexander and several of his officers once ruled in Jolo. The sultanate, dating from 1380, has an unbroken line of sultans, much like the old monarchies of Europe. Sultans included the Christianised Alimud Din, who presented the English a part of North Borneo in 1763 to express his gratitude to Englishmen for liberating him from a Spanish prison in Manila, and Jamalul Alam, who leased another part of Borneo to the English in 1872, the descendants of whom are still receiving rentals from the British.

The first Philippine embassy was sent to China in 1372 A.D., and trade existed with Japan, the Moluccas, Siam, and Cambodia.

Spanish Period

Ferdinand Magellan rediscovered the Philippines on 16 March, 1521. He and his men were resisted by a Filipino force under Raja Lapulapu, armed with, among others, lantakas, the locally manufactured cannon using gunpowder. Magellan and many of his men were killed, and the survivors returned to Europe.

Another powerful Spanish force came in 1564, headed by Miguel Lopez de Legaspi and Andres Urdaneta. Manila was defended by

Filipinos under Raja Soliman, who died fighting. Legaspi became the first Spanish Governor-General, rebuilding Manila. Revolts against the Spaniards were prevalent, interrupted only by events like the invasions of the Philippines by Chinese pirate fleets, first of Li Ma-hong, and then of Ko Xin-ga, during which Filipinos allied themselves temporarily with the Spaniards. The Spaniards, however, managed to enlist enough Filipino co-operation in constructing structures like churches, schools, and government buildings.

The Seven Years' War found the English invading and conquering Manila in 1762. As in the Chinese invasions, the Spaniards succeeded in securing Filipino support. The withdrawal of the English was a bit hasty after peace was effected, and so many members of the force, including Indian Sepoys, were left behind in Rizal Province at the mouth of the bay. Stranded, they intermarried with the natives. Many people in two towns of that province still trace descent from the invaders.

Despite Spanish grant to Filipinos of representation in the Spanish Cortes, the parliament in Spain, revolts continued. Filipino radicals and scholars spent years in Europe planning a major revolution. Dr. Jose Rizal, who later married an Englishwoman, wrote in Spain and Germany two inflammatory novels whose copies were smuggled into the islands. The author was arrested upon his return and later executed in Manila. The Filipino general, Emilio Aguinaldo, known well by George Bernard Shaw, was exiled to Singapore by the Spaniards. The General spent his time abroad procuring arms.

The nation-wide revolution began in 1898, spearheaded by Andres Bonifacio, after many Filipinos, including three priests, were executed by the Spaniards. The Philippines was a battleground when the Spanish-American War broke out and Commodore George Dewey embarked his fleet for the Philippines. The American fleet commander met General Aguinaldo in Hong Kong, and gave the Filipino a lift to the Philippines. Aguinaldo took over command of the Philippine revolution army and started the campaign that soon found the entire country, except Manila, in Filipino hands. Aguinaldo set up the First Philippine Republic, complete with a parliament. A constitution, patterned after those of several countries, including Switzerland, was promulgated. Filipino and American forces finally wrested Manila from Spanish hands on 13 August, 1898. A few hours before the capture of Manila, however, a protocol of peace between the US and Spain was signed abroad, and the US paid Spain twenty million dollars for the islands by virtue of the Treaty of Paris.

Aguinaldo and his government, having virtually annihilated the entire Spanish force and captured its leaders when the peace treaty was signed, recognised a betrayal. The Philippine-American War promptly erupted and raged for two years. American reinforcements poured in. Among the dead were the famous General Henry W. Lawton, terror to the Indians of Northwest America, and General Gregorie del Pilar, youngest Filipino general who defended Tirad Pass to the last man, including himself.

American Period

The capitulation of Aguinaldo's forces late in 1899 saw the establishment of the American regime in the Philippines and the creation of the Philippine Constabulary. Among the Filipino officers of the revolution army who took advantage of a general amnesty, was Major Manuel Quezon, later to become Filipino Resident Commissioner in Washington and President of the Commonwealth of the Philippines. Some Filipinos favoured making the Philippines a State of the American Union. Some others advocated immediate, absolute independence. Still others favoured gradual independence.

Military government was superseded early by civil administration in which Filipinos held major posts. General Arthur MacArthur, father of General Douglas MacArthur, was one of the early American officials in the islands. General John J. Pershing and the donor of the famous tennis cup, Governor Davis, were other officials. The legislative body was predominantly Filipino from the start, with the Philippine Senate headed by Quezon. The Tydings-McDuffie law finally settled the date of independence, 4 July, 1946, and the Commonwealth of the Philippines was created in 1935, seeing the election of President Quezon to the leadership of an autonomous government.

Quezon discerned a war and decided to strengthen the defence forces, for which he was roundly criticized in the US as trying to perpetuate himself in power on the Latin-American pattern. He asked General Douglas MacArthur, then just retired as Chief of Staff, US

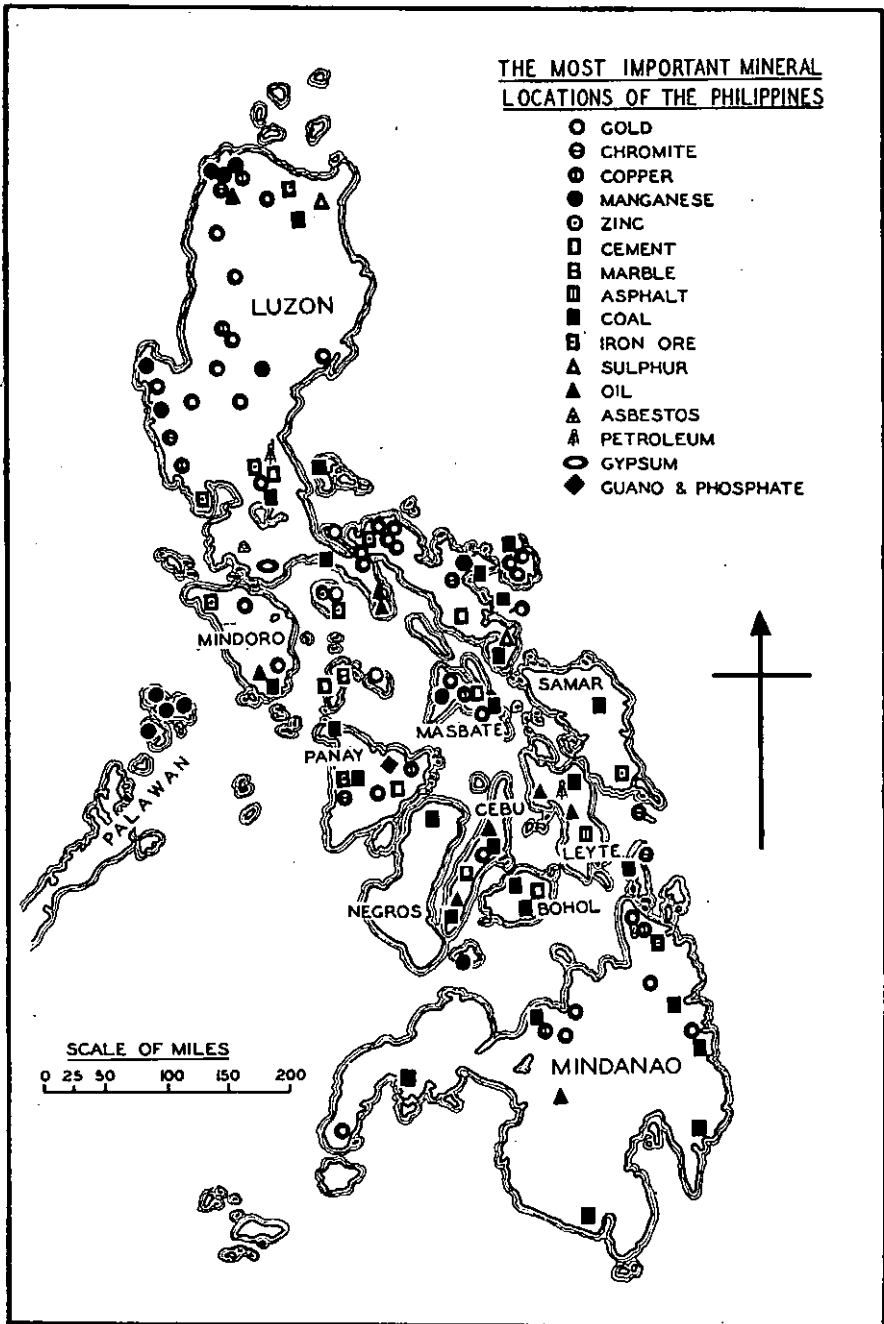
Army, to build the armed forces from the veteran Philippine Constabulary nucleus. Among MacArthur's assistants in the Philippines was a Colonel Dwight D. Eisenhower.

Quezon's foresight put the Philippines in a relatively good position when war broke out. A fairly ready force that included a Filipino air force and navy existed. One hundred thousand Filipino officers and men were impressed into the Armed Forces of the US, and 300,000 were set to undertake guerrilla activities. Of the 400,000 some 100,000 were counted after the far as casualties. But the regular armed forces held out for almost six months, earning for the Filipino soldier a wartime accolade, "greatest fighter in the world," from Sir Winston Churchill, who was speaking in Parliament. The guerrillas troubled the Japanese during the entire war while the Philippine Government was in exile in Washington after its leaders slipped out by way of Australia.

A Japanese-sponsored republic was installed in the Philippines during the war. The Philippines became an unwilling member of the Greater East Asia Co-Prosperity Sphere. Liberation of the country in 1945 left Filipinos only a year to rebuild themselves for real independence. Rehabilitation went on fast, and on 4 July, 1946, when the Philippine flag began to fly alone and only the Filipino anthem was chanted, the Philippines was fairly stable, although communist-incited forces roamed the country.

Resources

The Philippines is rich in minerals. Lavish deposits of copper and high-grade chromium are found in



Zambales Province and the Bicol Region; zinc in Marinduque; coal in Albay, Cebu and Zamboanga; iron ore in Surigao; manganese and asbestos in Ilocos Norte; petroleum in Quezon and Leyte; asphalt in Leyte; gypsum in Batangas; guano and phosphate rocks in Capiz; sulphur in Sorsogon and Cagayan; marble in Romblon; and cement in Cebu, Rizal, Albay, Romblon, Masbate, Iloilo and Bohol. Gold mining is also going full blast in the Mountain Province and oil prospecting is being undertaken.

Major agricultural products are rice, sugar, peanuts, coconuts, hemp, abaca, and tobacco. The staple food is rice, almost half of which was imported during the turbulent years immediately following independence, because the local rice fields roared with gunfire. The Huk forces were contained in 1952 and rice production soared again.

Foreign trade is mainly with the US, with which the Philippines still enjoys some free trade arrangement. The peso, two of which make a US dollar, which is also legal tender in the islands, is the local currency. Sugar, the main export crop, finds its way to the US, as do tobacco, timber, copra, crude oil, hemp and minerals.

Filipino economists have had cause for misgiving about free trade started in 1909. Free trade had developed an economy completely dependent on a thriving export trade. Free trade before independence had made Filipinos accustomed to non-payment of tariffs and to high cost of producing goods. Under American government, and availing of a free market, Filipinos have developed standards of living, including wages,

far above those in other countries which produce similar products. The eventual closure of a free market because of Philippine independence would find a nation seeking new markets and engaging for the first time in competition that is impossible for her because of her high cost of production.

Tariff barriers and, possibly, currency and exchange difficulties, are factors the Philippines would have to surmount once free trade is totally written off. This would necessitate either diversification of domestic agricultural and industrial production to abolish dependence on the export market, or reduction of the standards of living, including wages, to the level of Asian nations. The latter remedy is untenable, because a standard of living that had been made should not be unmade.

The nation is striving hard to industrialize. Import controls have been clamped on foreign goods, allowing only those not yet manufactured locally to come in. Refined sugar, canned goods, cement, toilet articles, office supplies, vehicle tyres, plywood, cigarettes, electric appliances, leather and rubber shoes, wire fences, building materials, and other such items are among those manufactured locally. Textile mills are multiplying. Heavy machinery is being installed as quickly as possible. Filipinos are anxious for the day when they manufacture, instead of merely assemble, their own vehicles.

A new series of hydro-electric plants designed to harness the powers of the turbulent rivers and falls is being built. The Ambuklao hydro-electric power line to Manila,

with a capacity of 330-million kilowatt hours and costing 130 million pesos (65 million dollar) was inaugurated recently, culminating six years of planning and construction. A bigger hydro-electric plant making use of the Maria Cristina Falls is in the South. An atomic reactor is expected to generate cheaper electricity.

As regards solving the social problems, the Philippine Government fulfilled the promises of the Communists by subdividing among small farmers the plantations and big estates. Material assistance is given by the government to surrendered dissidents. Farmers and businessmen get financial loans. Millions of pesos are used to buy loose firearms and to reward informers. Millions of pesos, too, are funnelled into housing. Peace has returned to the country.

Despite its present economic limitations, the Philippines is relatively stable in Asia because of factors like abundant natural resources and the people's healthy outlook. Filipinos are endeavouring to maintain their high standards of living.

Government

The Philippines is a republican state with presidential system. Executive authority is vested in the President; legislative power, in the Congress, comprising the Senate and the House of Representatives; and judicial authority, in the Supreme Court.

A president is elected every four years, together with a vice-president, and he may be re-elected once. Elections are by secret ballots. The senators, 24 in all, have a term of six

years. One-third of them are elected every two years. The more than 100 representatives of the lower house, who represent their respective provincial districts, have a term of four years.

The provinces are each headed by a governor, elected by the province voters. Towns in a province are each headed by a mayor, elected by the townspeople. Elected along with them are the members of the provincial boards and municipal councils. Cities are administered by mayors who are either elected or appointed.

Appointments of the members of the Supreme Court are made by the President, and confirmed by the Commission on Appointment of the Senate. Likewise appointed, are the lower judicial authorities, who, consecutively, are the justices of the peace courts, judges of the courts of first instance, judges of the courts of Industrial and Agrarian Relations, and justices of the Court of Appeals. The Philippines does not believe in the jury system, nor in divorce.

The members of the President's cabinet, called secretaries, and administering departments, are also appointed by the President. The cabinet members are the Executive Secretary, Secretary of National Defence, Secretary of Education, Secretary of Finance, Secretary of Public Works and Communications, Secretary of Agriculture and Natural Resources, Secretary of Justice, Secretary of Health, and Secretary of Foreign Affairs. A corresponding under-secretary for each department is also appointed.

The system of checks and balances among the three co-equal branches of the government exists. There are

enough safety valves to avert a police state.

The government operates several public corporations and entities, among them the Central Bank, the National Power Corporation, the National Development Company, the National Rice and Corn Corporation, the Philippine National Bank, the Government Service Insurance System, the Manila Railroad Company, the Luzon Bus Line, the National Shipyards, the Manila Electric Company, the Manila Gas Corporation, the Irrigation System, the Home Financing Commission, and the Philippine Homesite and Housing Corporation.

Among other offices are the Civil Defence Administration, National Fibre Inspection Service, Public Service Commission, Social Welfare Administration, Bureau of Customs, Bureau of Census and Statistics, Bureau of Lands, Bureau of Animal Industry, Bureau of Printing, Bureau of Private Schools, Bureau of Copyrights and Patents, Bureau of Hospitals, Quarantine Bureau, and National Bureau of Investigation.

Minimum wages are fixed by the Wage Administration Service to prevent exploitation of employees. The eight-hour law is observed. The status and welfare of employees are taken care of by the Bureau of Civil Service, which ensures 30 days' leave a year for an employee, maternity leave for married women employees, and other leaves and pays. Women, many of whom hold key positions, receive equal pay for equal work, and have a social status that is said to surpass that of Western women, because they are accorded priority, more consideration and privileges on account of their sex.

Most businesses are left to private enterprise, like the operation of most transportation utilities, including taxi and airline services, as well as the publication of newspapers and operation of television, radio and motion picture studios and stations. Just and fair competition is allowed unhampered, in order to prevent monopolistic concentration of business.

Treaties and Agreements

The Philippines has signed with the US a Mutual Defence Assistance Pact, which provides that any attack on any of the parties to the treaty will be considered by the other as an attack on herself and met accordingly. The Philippines is receiving military aid in the forms of equipment and technical assistance under the treaty.

The Philippines is also a signatory to the SEATO, which she had originally proposed as "Pacific Pact." A Filipino general has been given the privilege of heading at present the eight-nation joint SEATO group in the permanent office in Bangkok, Thailand.

She is also a signatory to the UN Charter concluded at San Francisco. A Filipino has served as President of the UN General Assembly, and the Philippines promptly sent five battalions to Korea during the UN police action there.

The Philippines has also recently decided to join the Colombo Plan nations, in whose conferences she used to merely send observers.

Filipinos have also decided, after a plebiscite, to grant Americans equal rights in the Philippines. They effected this by voluntarily amending the Constitution and inserting the

parity provisions. By the same token, several lands for use as military, air and naval bases were leased by Filipinos to the US Government for 99 years.

These are the major treaties and agreements entered into by the Philippines, which maintains diplomatic relations with free countries, where it has its embassies and consulates.

Defence Organization

The precept is that civil authority is supreme, and so the President of the Republic is also called the Commander-in-Chief of the armed forces, officially called Armed Forces of the Philippines (AFP). He exercises his authority through the Secretary of National Defence.

Congress, however, whose two houses have their respective committees on national defence and security, and in whose hands rest the purse strings and the power to declare war, controls defence through finance.

The Department of National Defence administers the Armed Forces, composed of the Philippine Army (PA), Philippine Navy (PN), Philippine Air Force (PAF), and Philippine Constabulary (PC). A single Chief of Staff is at the helm of all these services, although each service has its own commanding general responsible to the Chief of Staff, who is, in turn, responsible to the Secretary of National Defence.

Under the Chief of Staff at the General Headquarters are, aside from the Vice Chief of Staff and the Deputy Chief of Staff, the members of the General Staff; namely, Assistant Chief of Staff for Personnel

(G-1), Assistant Chief of Staff for Intelligence (G-2), Assistant Chief of Staff for Plans and Operations (G-3), and Assistant Chief of Staff for Logistics (G-4). A member of the General Staff may come either from the Army, the Navy, or the Air Force. (The Philippine Constabulary, though considered as a military organisation, composed mostly of regular officers, and headed by a general, is unique in that it is responsible only for internal peace and order, including the anti-dissident operations, activities such as guarding during industrial disputes, and other national police jobs.)

At General Headquarters, in Camp Murphy, Quezon City, are found the major corps and offices, including Adjutant General Service, Corps of Engineers, Ordnance Service, Dental Corps, Medical Corps, Artillery Corps, Economic Development Corps, Quartermaster General, Public Relations Office, Troop Information and Education Division, Public Information Division, Reserve Affairs Division, Chaplain Service, Judge Advocate General Office Special Services, Post Exchange, Finance Service, Headquarters Service Group, Provost Marshal Office, Quartermaster Truck Service, Research and Development Division, Armed Forces Base Shop, Armed Forces General Depot, Armed Forces Band, and Legislative Relations Division. Among other offices are the War Plans Division, the Efficiency Board, and the SEATO Planning Group. The Army also operates a non-military school for enlisted men and their dependants. Each of all these offices usually maintains corresponding branches in the respective commands and units in the field down to battalion or detachment level. Intelligence agencies,

apart from G-2, exist. One of them is the Military Intelligence Service. There is a National Intelligence Coordinating Agency.

The Army, Air Force, Navy and Constabulary each has its own main headquarters. The Army has its headquarters in Fort William McKinley, Rizal, where the Philippine Army Training Command, which operates the Philippine Army School Centre, is found. Also found there are the cavalry, armoured and other such units. The Air Force headquarters is in Nichols Air Base, Rizal; the Navy headquarters, in Dewey Boulevard, Manila; and the Constabulary headquarters, in Camp Crame, Quezon City. All these major services also operate and maintain corresponding offices and branches throughout the islands where their units are found.

The Philippines, like Australia, is divided into military areas or commands; namely, the First Military Area, responsible for Northern and Central Luzon; the Second Military Area, whose jurisdiction is Southern Luzon; the Third Military Area, covering the Visayas; and the Fourth Military Area, whose territory is Mindanao. Each military area, headed by a general with his own staff, has its own headquarters with the corresponding staff offices and services. Under each military area headquarters are the assigned battalions.

The basic unit is the battalion, officially called Battalion Combat Team (BCT). The BCT is complete in itself. Its manpower is replaced at times by officers and men in the Replacement and Holding Group in Fort McKinley. The 3rd Infantry

Division, also in Fort McKinley, is responsible for the training of 20-year-old youths selected annually by ballots after their universal military registration. They undergo from six to 12 months of rigid military training that occasionally includes actual operations against dissident elements.

Schools in the Philippine Army School Centre range from commando, armoured and atomic tactics to command and general staff schools which train even full colonels for duties on the division level. Though young regular officers are ordinarily produced by the Philippine Military Academy, many are produced by West Point in the US, and usually they have to undergo post-graduate training at the Command and General Staff College at Fort Leavenworth, Kansas; the infantry school at Fort Benning, Georgia; the artillery school at Fort Sills, Oklahoma; or other schools for their branches of service. The School for Reserve Officers' Training Corps in the different universities in Manila and other provinces.

The Navy develops its officers in the Philippine Navy School, the private nautical schools in Manila, and the naval academy at Annapolis in the US. It also gives its men on-the-job training with the US 7th Fleet.

The Air Force has schools for pilots and crew members. Others are trained in the US at, among other places, Randolph Field, Texas. Older officers, trained in propeller-driven planes before the war, are attending jet-transition courses with US airmen in the Clark Air Force Base in the Philippines. Private schools also

produce qualified men in their respective Air Reserve Officers' Training Corps.

The Philippine Constabulary runs its own schools, among which are the Psychological Warfare and Criminal Investigation Schools, which also train regular batches of Indonesian officers and other Asians sent to the Philippines.

Though the armed forces of the Philippines are on the US pattern, they are very dissimilar in many respects, especially in the manner of commands. As already said, the armed services of the Philippines has only a single Chief of Staff, unlike the US armed services, which have joint chiefs of staff, and, above them, a chairman and secretaries for the respective services. Filipinos find a centralised command conducive to unity, co-ordination, efficiency, and absence of conflict among the services.

Rank insignia for officers are based on the Philippine flag, whose symbols are the sun, with eight rays, the stars, and the triangle. Hence a second lieutenant is indicated by a silver triangle, standing like a three-sided pyramid. A first lieutenant wears two silver triangles joined to each other at one point. A captain has three silver triangles, also joined. One gold sun indicates a major; two, a lieutenant colonel; and three, a full colonel. A brigadier general wears a star, in much the same way as an American general does, the only difference being that the Filipino star emphasizes its five points as five triangles. A major general has two stars; a lieutenant general, three stars; and so on. Enlisted men's grade chevrons are on the American

pattern, different only in their stiff triangular shapes.

The Armed Forces of the Philippines career management programme has evolved a system of promotions based on length of service, time in grade, and educational qualification. Reserve officers are occasionally given a chance to be integrated into the regular force through integration examinations. Pay and allowances for Filipino soldiers are reputed to be among the world's highest. On top of that, they are at present receiving their "back pays" (accumulated salaries and allowances not received during the war). A system of gratuity and retirement pension exists. An officer is automatically promoted one rank when he retires, and gets the corresponding retirement pension. Insured by the Government Service Insurance System, he also receives the insurance benefits aside from the privilege of loans for house construction or other purposes, on the easy-payment plan. If he dies, his dependants also get the benefit from the Mutual Benefit System, in addition to burial expenses.

The Philippine active forces, although enough at present to be constituted into divisions, are divided into the basic units in line with the atomic war tactics of dispersal. A tendency is to stress jungle and commando warfare and to improve on the guerrilla tactics employed in the last war, as seen in the training of the army Scout Rangers. The Navy is happy with its small, mobile ships that are very handy in operating through shallow waters along the coastline of 7,100 islands which its men are patrolling day

and night. The air force has acquired jet planes. It is acquiring more. But the emphasis is not so much on equipment, which is costly to maintain in peacetime, as on training, which is hard to do in wartime.

The Philippines renounces war as an instrument of national policy. As a democracy, its forces, though being geared for war, are only for defence purposes, and for preserving freedom enjoyed by Filipinos in common with Australians.

The high casualties suffered by my assault forces were primarily caused by their lack of training. Even in the smallest action there are always tactical tricks which can be used to save casualties, and these must be made known to the men. It frequently happened that dash was used where caution was really needed, with, of course, casualties as the result. On the next occasion, when boldness really was required, the men would be over-cautious. In these small-scale infantry tactics in particular, what is wanted is a maximum of caution, combined with supreme dash at the right moment.

—Field-Marshal Erwin Rommel.

TRAINING THE MILITARY SHOT

Lieutenant-Colonel MacN. C. Rose

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ANY changes in marksmanship training which claim to achieve better results are destined to be challenged by supporters of existing methods. Such people suspect a "get rich quick" attitude, which slights what they consider the "essentials." But what are the essentials of marksmanship training in preparation for battle?

Known distance marksmanship as taught during the past 30 years has been weighed in the balance and found wanting. It has failed to produce acceptable battlefield results in World War II, Korea, Malaya, Kenya or in Cyprus.

Certainly if known distance marksmanship is considered as only an initial step in progressive training, which includes realistic transition and field firing, theoretically a competent military shot should result. In practice this is not true, largely because such training has to be curtailed or omitted owing to lack of time and suitable ranges.

Even if this full course of training is completed, really competent marksmen are not in fact produced because field firing, as currently conducted, lacks realism and so possesses only limited transfer value. At best, such training requires time less likely to be available in the future than in the past.

The following analysis of the infantryman's tasks in battle has been made from battle reports, current military literature, questionnaires and oral interviews with many experienced infantrymen:—

- (a) Enemy soldiers are rarely visible to the marksman except during close combat.
- (b) Battle targets are often a number of men or objects, arrayed in a lateral manner and utilizing cover such as folds in the ground, hedges, perimeters of woods and ditches.
- (c) Targets are seldom clearly visible and are often only indicated by smoke, flash, dust, noise or fleeting movement.
- (d) Such targets can best be engaged by marking their position on the ground by reference to an identifiable nearby object suitable for use as an aiming point.
- (e) The range of battle targets is rarely over 300 yds.
- (f) The nature of targets and the ground on which they are encountered, coupled with the fact that the defence will usually be dug in, normally precludes the use of the prone position, but favours a supported position from a fire trench, either standing or kneeling.
- (g) Selection of an accurate aiming point in elevation is a difficult task, because of the low outline and obscurity of battlefield targets.
- (h) The firing of a number of shots at a single target stresses an action which is rarely required in battle. The more common problem is the rapid aiming of the rifle for a first-round hit and subsequently aiming at adjacent targets from several

slightly different firing positions.

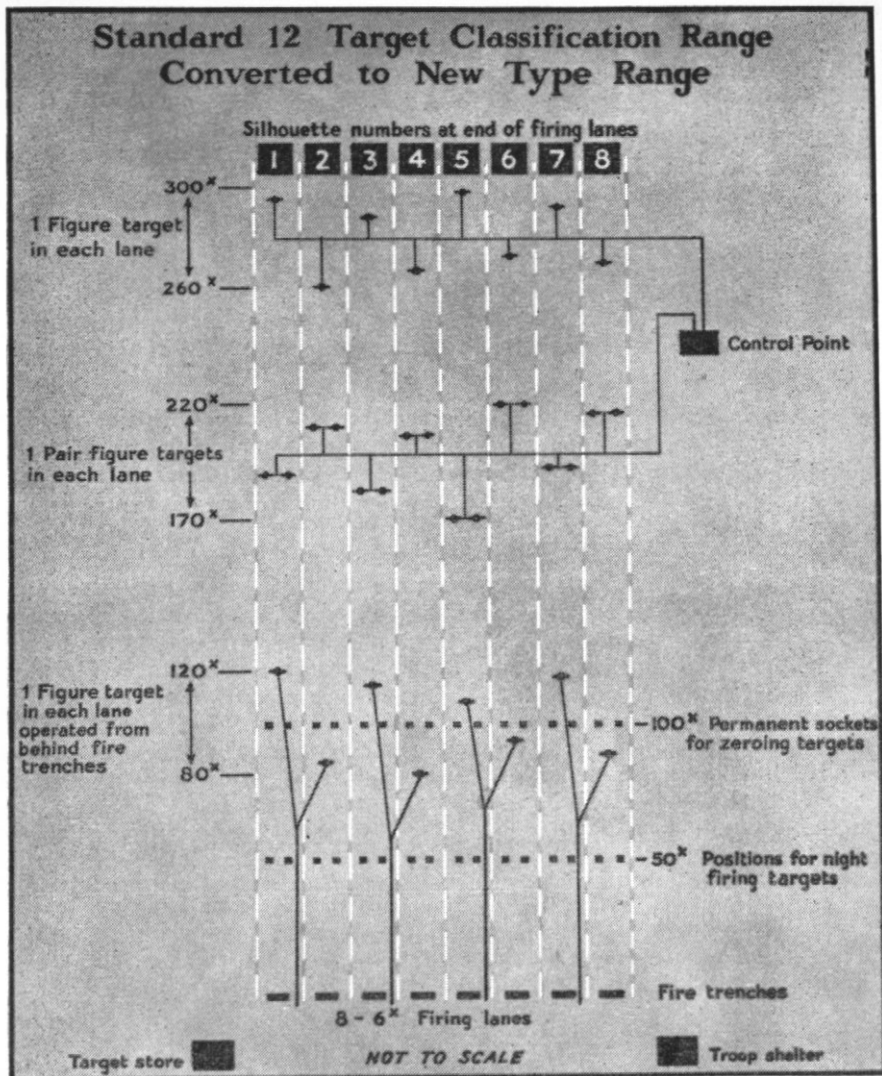
Our training should aim to achieve three basic skills:—

- (a) Ability to aim correctly at indistinct targets at ground level.
- (b) Ability to shoot with flexibility from various positions.
- (c) Ability to aim off, or up or down, according to the wind and the estimated range.

There has been considerable speculation why men do not make better use of their rifles in battle. The ability to hit clearly visible targets under ideal range conditions may well result in false confidence on the battlefield. Even a highly-trained soldier may become discouraged if, after exposing himself to enemy fire, he is unable either to locate or to hit a target. One of two equally undesirable reactions will result: he may give up further efforts to fire, or he may distribute fire wildly over the visible foreground.

A rifleman who has been taught to locate obscure targets, but in the absence of visible targets is taught to place his fire upon selected likely areas, will find his training usable and his confidence will increase with experience.

During the past year the Americans have been carrying out full-scale training trials based on these principles, and "Trainfire" has now been adopted for use throughout the American army. It is claimed that these training methods have greatly improved battle shooting and produce a most encouraging response from trainees of all grades.



Let us consider what steps we could take to develop these battle shooting skills in our basic and annual weapon training.

Firing Positions

The Infantryman fights from a trench in defence and to the

enemies' trenches in attack, which he then uses for consolidation. His patrol shooting is nearly all at night, except in forest country. So, although the prone position is the most advantageous for accuracy, the soldier in war is seldom able to use this position, because he is

either in a trench, or moving through crops or trees when he gets the opportunity to fire his rifle. Even in an ambush position he will often have to fire from the sitting position if his target is not to be obscured by scrub or grass.

Our range practices should therefore be designed to give the soldier practice in firing from trenches and from the sitting and standing positions in preference to the lying position. Timber will be required for revetment, but there should be no cost for labour in most areas.

Targets

To develop the various skills in aiming at indistinct targets, the soldier must be trained on targets which approximate to active service targets. The 4-ft. target should be used only for proving a man's grouping capacity and before and after zeroing. At all other times he should fire at figure 11 and 12 targets.

Flexibility

When dealing with an enemy attack, targets are not all at one range and then all at another. A section may be firing at 400 yds. when a group of enemy is seen moving close in on a flank.

With our new high velocity bullet, errors in elevation have been greatly reduced. Men with their sights set at 300 can now hit a figure target between 400 and point blank range without any alteration to the sights, but a well-trained man will remember to aim a little up or a little down according to his estimation of the range and the brightness of the light.

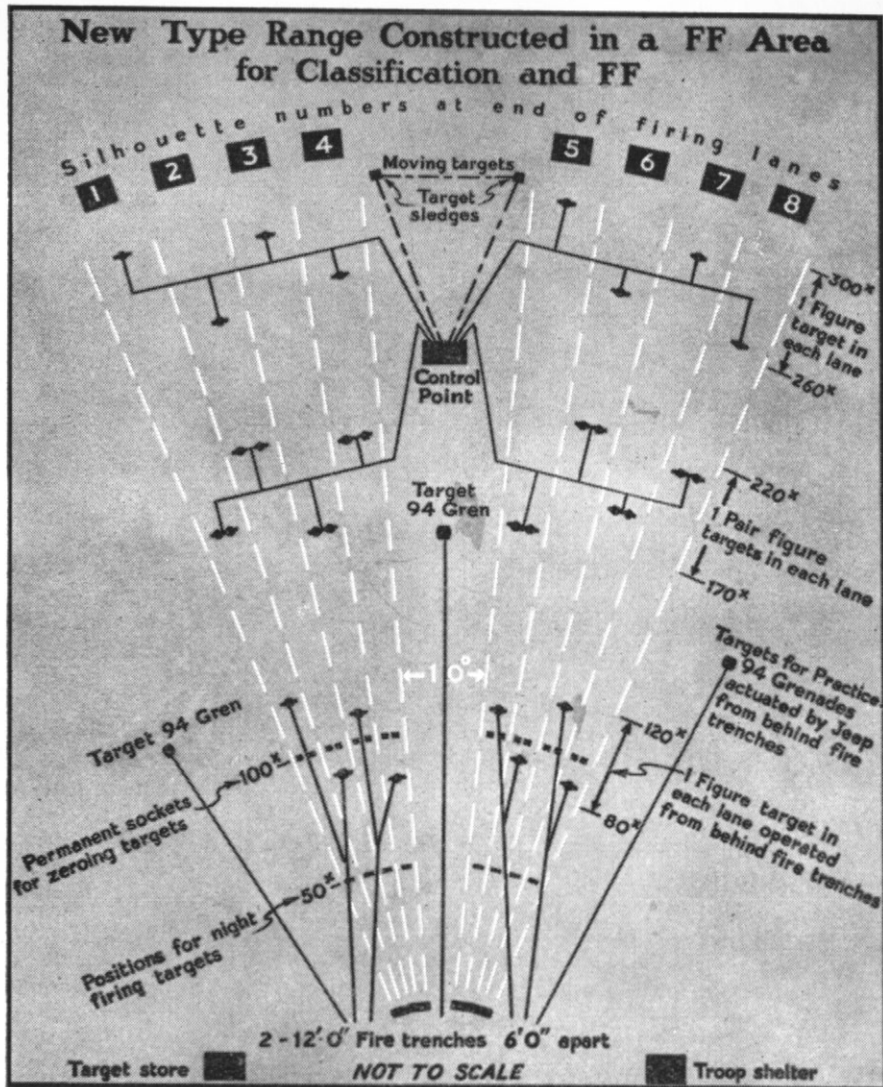
On our ranges the targets are always at the butts, and the firer must move to another firing point to shorten the range, whereas the reverse should be the case if battle conditions are to be simulated.

On our classification ranges the targets are exposed high above ground level, and the soldier gets no true idea of his errors by observing strike. One of the most important skills which he must learn in training is to adjust his fire by observation. Errors in direction are of less importance than errors in elevation, because the majority of battle targets are linear.

Targets on our ranges should therefore be at ground level and at unspecified ranges. The firing points at 100, 200, 300 yds. should be removed, so that this ground can be utilized for target exposure, the trenches for defensive practices being 400 yds. from the butts. In attack practices there is no need for firing points, as the aim should be to develop the man's skill in quick shooting from the standing, kneeling or sitting positions. See Diagrams "A" and "B."

Modernization of Ranges

Our ranges are out of date. Most of them were built more than 50 years ago, when different conditions obtained. We no longer "fill up the firing line" to produce fire power. We no longer have a long service regular army, but rely on national service and short service engagements. The "tail" of the army has grown enormously, and many small units need to fire and classify at times which fit in with their other work. The infantry tasks in the cold war demand a far



higher standard of quick shooting than can be achieved by old methods of training.

Butts

Far too many markers are required to handle existing target apparatus. One man in a shelter to

the side of a range should be able to pull up several groups of targets at intermediate distances by using levers. The Americans have developed a mechanical target apparatus which is highly satisfactory but probably too costly for us.

Field Firing Ranges

Very little use is made of our field firing areas, whereas classification ranges are over-booked throughout the year. The type of range at Diagram "B" can be constructed almost anywhere at quite small cost in comparison with the cost of a normal classification range and without detriment to the use of the ground for mortar firing and larger tactical exercises.

Classification and Competitions

The natural desire to assess a man's proficiency, or to select a winner, must not be permitted to make our range training too deliberate; an element of luck must be accepted. When you hit an enemy soldier you achieve your aim whether you hit him in the chest or the leg. With the introduction of figure targets in place of square targets, the scoring surface will be greatly reduced. In effect, the firer will no longer get points for a near miss. (From the point of view of fire effect, a very near miss is no more effective than a flag!) Scoring should be reduced to its simplest form: one point for a hit, and to prevent too many ties two points for a central hit.

Any competition is the aggregate of several practices, and it is considered that if the conditions are sufficiently severe there would be no great number of ties, even with this simple form of scoring. In the event of ties, the winner should be chosen in a re-shoot with slightly stiffer conditions.

Competition shooting must not be allowed to dominate and direct our

methods of training for the battlefield. The reverse must be the case. Whatever the type of target used or the rules made for the competition, the best shot will still win.

A Prepared Field Firing Range

It has been pointed out earlier in this article that our field firing ranges are hardly used for rifle shooting, whereas our classification ranges are unable to meet demands.

If you look up "Field Firing" in any of our pamphlets, you will find some such statement as this: "A soldier is not fit to take part in battle until he has been exercised on the field firing range as a member of a section. Simple exercises with a sound tactical basis are not difficult to prepare. The enemy should be represented by figure targets which are exposed from suitably sited markers' pits."

And there the matter rests. It is you who have to reconnoitre the ground and make up the exercises, and it is your men who have to dig the pits (and fill them in again). You will be worried about templates and safety arcs and a dozen other things. As a result, if your rifle firing takes place at all, it develops into a thing called "Section in the Attack," which apparently requires no trenches and no markers' pits, as you merely fire at figure targets stuck into the ground, as and when you see them (or when you are told where to look).

A field firing exercise at section and platoon level should aim to exercise a team of men in the following skills:—

(a) *The Defence*.—The proper use of trenches when subjected to

artillery concentrations prior to an attack, i.e., weapons and equipment below ground, one man per trench bobbing up every now and then so that the enemy cannot arrive unobserved. Delivery of maximum fire when the enemy are discovered (your position may not be covered by the mortar or artillery concentration and your fire may break up the attack on less fortunate flanking sections). Fire control to prevent waste of ammunition in the heat of battle. Refilling of magazines during lulls in the attack. Application of section fire to an area where flash and smoke indicate presence of the enemy, but no targets can actually be seen. Use of "94" grenades to cripple or destroy tanks which overrun the position. Local mopping-up operations to clear up the vicinity when the attack has been repulsed and before another wave comes in.

The markers' pits and target apparatus required for this type of exercise do not present any great problem or expense. You require a few mounds (or pits) to conceal sledges which provide moving targets such as advancing infantry or tanks. These moving targets are activated either from the markers' pits or when close enough to the firers, by a jeep in rear of the firing point, attached in turn to various towing wires. The exercise, the trenches, the pits and the targets should be planned and prepared by the authority in charge of the

range and be kept in working order.

It may be argued that this stultifies initiative, etc., but surely it is preferable that men should be exercised even in this simple manner than not at all.

- (b) *The Attack*.—As has been indicated earlier in this article, quick shooting on the move at short ranges can be practised on a modified form of classification range by removing the 100, 200 and 300 yd. firing points and using that area for target exposure. When these skills have been mastered the soldier must be exercised on the field firing range in "patrol shooting," i.e., shooting in the half-light or moonlight at targets in rough ground and bushes.

Those who have served in Malaya or Kenya are well aware of the type of range required for this type of training. They are not difficult to construct with a few markers' pits, tin cans, sacks and wire to activate them, but in stations at home it should not be left to the transitory company commander to improvise such firing courses, as he does in less civilized parts of the world when more time is available. A great part of the army is now equipped with SMGs. This low velocity weapon does not require a large danger area, and there is no reason why there should not be many "patrol ranges" in various corners

of field firing areas, so that large numbers of men can be taught the skills of quick shooting.

Conclusion

Both we and our American

allies are aware that our standard of battle shooting is unsatisfactory. It is suggested that the fault lies mainly in out-dated training methods and ranges, and no marked improvement can be made until these shortcomings are rectified.

A REPRIMAND: THE CRIMEA, 1855

Contributed by Captain F. L. Jones

(late The Irish Regiment of Canada), Hamilton, Ont.

THE following is an excerpt from "Voice from the Ranks," by Sergeant Gowing, Royal Fusiliers. (Edited by Kenneth Fenwick, and reprinted in 1954 by William Heinemann Ltd., London, England):

One day in March I was one of the sergeants with a party of men that had been sent to Balaclava to bring up supplies in the way of biscuits and pork, or salt junk (salt beef). We had a young officer with us, well mounted, who had but little compassion for poor fellows who were doing their best, trudging through the mud up to their ankles, with a heavy load upon their backs. The party was not going fast enough to suit the whim of our young and inexperienced commander, who called out to the writer: "Take this man's name, Sergeant, and make a prisoner of him when we get home."

The unfortunate man was doing his best to keep up. Throwing his load of biscuit down in the mud, he exclaimed: "Man indeed! Soldier indeed! I'm only a poor, broken-down commissariat mule!"

He was made a prisoner of at once, for insubordination. But when I explained the case to our Colonel he took quite a different view of the matter, forgave the man, and presented him with a pair of good warm socks and a pair of new boots; for the poor fellow had nothing but uppers and no soles for his old ones. And in order to teach our smart young officer how to respect men who were trying to do their duty sentenced him to three extra fatigues to Balaclava—and to walk it, the same as any other man.

—From *Canadian Army Journal*.

THE AMF GOLD MEDAL AND AACS PRIZE ESSAY

History

IN 1911 the Minister for Defence authorized the annual issue of a gold medal for the best essay on a subject set by the CGS. This competition was known as the "Gold Medal Essay" and the "Commonwealth Military Journal Gold Medal Essay" competition. It lapsed during the 1914-18 war. It was reintroduced in 1929 as the "AMF Gold Medal Essay." The competition was open to officers and other ranks of the active and reserve forces.

In 1957 the conditions of the competition were revised to provide for entries to be submitted under one of two rank categories, and for the gold medal to be supplemented with cash prizes. The Australian Army Canteens Service agreed to donate £100 annually for this purpose. Recognition of this grant is made in the title.

Rules

Title

The competition is titled the "AMF Gold Medal and AACS Prize Essay."

Eligibility to Compete

All ranks on the Active and Reserve Lists of the Australian Military Forces.

Subject

A separate subject shall be set annually for each section by the Chief of the General Staff, and promulgated in AAOs.

Sections

There shall be two sections.

- (a) Junior — Members up to and including substantive captains.
- (b) Senior — Substantive majors and above.

Prizes

- (a) For the best essay in each section—£25. In the case of two or more essays of equal merit this prize money may be shared.
- (b) For the better of the two section winning essays—provided it is of a sufficiently high standard—the AMF Gold Medal and a further £50, making in all the AMF Gold Medal and £75.

Submission of Essays

- (a) Essays will be typewritten and submitted in quadruplicate. Units will co-operate with competitors and arrange for essays to be typed, if this assistance is requested.
- (b) Essays may be of any length. It is not desired to define the length limits, but as an indication they should be between 3000-5000 words.
- (c) Authorship will be strictly anonymous. Each competitor will adopt a motto and enclose with his essay a sealed envelope, with the motto and section identification typewritten on the outside, and his name and address inside.
- (d) The title and page number of any published or unpublished work to which reference is made in the essay, or from which extracts are made, must be quoted.
- (e) The essays will be addressed to the Secretary, Military Board, Victoria Barracks, Melbourne, S.C.I, the envelope being marked "AMF Gold Medal and AACS Prize Essay."

Judging

- (a) Essays will be judged by at least three referees appointed by the Chief of the General Staff.
- (b) The decision of the referees will be final. They are empowered not to award the AMF Gold

Medal and the AACS prize of £50 if, in their opinion, no essay submitted comes up to a sufficiently high standard of excellence.

Promulgation of Result

The results of the competition will be promulgated in AAOs. Additionally, the AMF Gold Medal and AACS Prize Essay will be published and distributed.

Subject for 1957

The subjects set for 1957 are as follows:—

Senior Section

"In a future war, the Australian Army Expeditionary Force will probably form part of an Allied Command, the logistical system for which may be organized on US lines.

Discuss the basis and degree of integration desirable and the additional administrative training necessary to cope efficiently with such a situation."

Junior Section

"Units operating in the South-East Asian Area are likely to be faced with a need for increased dispersion, against an enemy who makes a feature of deep envelopment tactics.

"Discuss some of the leadership problems likely to arise in units and sub-units in this situation, and your proposed methods for overcoming them."

Closing Date

Essays must reach the Secretary, Military Board, by 31 Dec 57.

THE MOST POTENT FORCE

Brigadier-General Charles E. Hoy, US Army

Reprinted from the January 1957 issue of the *Military Review*, Command and General Staff College, Fort Leavenworth, USA

IN Austria, Headquarters Tactical Command operated a non-commissioned officers' academy with an obvious objective—the production of high-calibre non-commissioned officers. Selection to attend this academy, as in the case of similar schools in other commands of the United States Army, signified that an individual possessed outstanding qualities and potentials of leadership. His graduation meant he had been taught the art of leadership with its traits, principles, and techniques.

But is such formal instruction enough? We should be concerned with what the future holds for the graduate of such a leadership school. His qualities of leadership and the exacting training which he has undergone form the foundation on which a bright future can be built. How he uses his talents and develops his potentialities will determine his degree of success as a leader. He has acquired the knowledge needed to lead men. His training has suited him for that leadership. Now it is up to him to apply this knowledge and this ability.

While much effort is devoted to increasing the knowledge and perfecting the skills of young leaders, we do not emphasize, as we should, another and equally important element of individual leadership. We have worked hard to achieve a material and physical perfection, yet have neglected what President Eisenhower has called “the most potent force—the spiritual!”

Morals and Morale are Key

Just what are the spiritual forces so necessary for successful leadership? There are two words which can be used to bring this point into focus—*morale* and *morals*.

Examination reveals that these two words have the same derivation and, at one time, had the same meaning. Modern usage has, however, assigned them different but related meanings. There is one point of similarity, though, which deserves emphasis: both words express abstract values. As such, they appeal to man's mind. This mental appeal is made first to the individual who, in turn, reflects the product of the appeal for the betterment of society.

A man's values, then, may be said to be the sum total of his morals and of his morale. Without a high positive total of both, his value to and position in society certainly are questionable. And so it is with a military leader. He must possess a greater number of positive mental values and, in addition, must know how to develop the maximum number of positive values in his subordinates.

Interdependent Factors

Good morale cannot be achieved at the expense of morals. The immoral and amoral man can never become a leader. This is more basic than we may at first realize, since morale is the result of the influence which the leader must exert over those he leads. If the moral influence is bad, then morale will suffer likewise.

Morals may be defined, generally, as one's sense of values as to right and wrong—the will to adhere to the right and refrain from the wrong, even in the face of popular condemnation or in opposition to established customs.

Morale, it may be said, is the state of an individual's mind toward everything that affects him—an attitude also affected by the attitude of the individual with whom he is dealing. Napoleon, in his statement on morale, said that "75 per cent. of the success or failure of a military operation depends on morale." Now, how can the leader affect morale?

First, it must be remembered that military morale, as such, can be neither purchased nor commanded; nor can it be won by a leader in a popularity contest. It definitely can-

not be had at the price of sacrificed morals. It is the leader's task to obtain morale by establishing conditions favourable to its development. Thus responsibility for the morale of a unit rests solely with the leader.

Leader Has Obligation

The personnel of an organization naturally and rightfully hold their leader responsible for the protection of their own interests, just as the members of a society hold the government responsible for theirs. The soldier, as a subordinate, cannot effect a noticeable change in his own lot because he is by definition subordinate to a superior who exercises control over his very life and over the conditions under which that life is led. Therefore, the soldier has a right to expect, if not demand, that his leader handle his interests in a vigorous and fair manner; and the leader has a moral obligation to fulfil this expectation.

The impression that everything is expected from the subordinate and nothing is given by the leader in return can spread through a unit like wildfire. Morale in that unit will sink to a low level. Without high morale the unit will lose its *esprit de corps* and, consequently, its combat proficiency, ultimately failing to accomplish its mission. It is obvious that this condition cannot and must not be permitted to develop in military leadership.

At times the military tradition of griping can, if not controlled by leaders, cause bad results through its adverse effect on morale. Too often there is an inclination for a weak military leader, or one who lacks loyalty, to ascribe either necessary hardships, or his own errors, to the

lack of understanding or foresight on the part of his superior commander. When such activity is indulged in, it is with the hope of winning sympathy and popularity with subordinates. It is rarely successful, however, and the subordinates usually tab this leader as weak and, as a result, lose confidence in him. This lack of confidence starts the reaction cycle of failure, beginning with lowered morale. The real leader never criticizes his superior in the presence of his subordinates. He must, if necessary, explain the reasons behind a superior's orders even though he does not always attempt to justify them.

Use Criticism and Praise

The leader must always take a positive approach to the problem that confronts him. Constructive criticism and appropriate praise, if wisely used, are two traits of positive leadership which will promote morale. Criticism should be used only to ensure that an error is not committed again or to improve on an existing solution. The only cure for unsatisfactory performance is prompt and suitable reprimand or on-the-spot correction. Never ignore a mistake! Never condone a failure! Mistakes ignored or condoned establish a bad habit, a habit which is contagious and which eventually may become a custom within a unit.

Reprimands also must be used wisely since they affect different individuals in a variety of ways. Some men become irked and resentful. Others become so frightened they are afraid to act and, eventually, lose their initiative and self-confidence. The wise leader will use criticism and reprimands in such a manner that

they will produce positive results rather than negative weaknesses.

The use of sarcasm and bad temper must be avoided. Above all, the individual must be made to feel that the correction is for his benefit and that he should do everything possible to prevent a recurrence of his mistake.

Be Judicious With Praise

Every human being hungers for praise. Recognition in the form of praise provides the strength and incentive to do better work. A personal incident may illustrate this: "When I was first learning to ski, admittedly I was terrible and fell all over the hill. Finally, after one particularly tough fall, my instructor said to me, 'General, you are doing much better; that is the best fall you've made today.'" Needless to say this simple remark improved my attitude toward skiing and toward the instructor, and my morale improved proportionately.

Some leaders dislike to praise and do so only in a grudging manner. They feel that praise will spoil their subordinates. This is not true. Most subordinates will respond favorably to praise; however, it must not be overdone to the point of creating a feeling of indispensability in the individual. A leader must know how, when, and where to apply praise. He must also know how much praise should be applied in any given situation. If praise is insincere or overdone, it will not achieve the desired results.

At the present time, both morale and morals within the Army need strengthening. The accusation has been made that too many of our

leaders are morally delinquent, or are lacking in a sense of moral responsibility. General Charles L. Bolte, former Vice Chief of Staff of the Army, emphasized the matter of moral courage in a forceful manner when he stated: "The spiritual strength and sense of moral responsibility on the part of the members of our Army constitute a real and vital element of our total strength."

We must take this moral approach to our young men—the potential leaders upon which the very life of the Army depends. They must not fall prey to the evil forces of degeneration which will challenge their chances for truly great leadership. As leaders they will be sorely tempted and, at times, will stand alone. If they require consolation in this, let it come from the fact that a leader must be someone apart—otherwise, he will fall into the dull category of those who find it easier or more convenient to take the course of least resistance, a course that ends in leadership failure. They must know their moral responsibilities and dedicate themselves to higher principles. A man's value is meaningful when the fight for right begins within himself and is won through his own decisions.

Real Leader is a Teacher

The reader, by now, may have begun to wonder at this sermonizing on the subject of morale and ethics. It may appear a subject more appropriate for the pulpit than for a discussion of leadership. Are leaders expected to be preachers as well? No, the leader is not a preacher. Rather, he is a teacher.

"How," a leader may ask, "does my conduct as an individual affect others or the Nation?" As a leader he is expected to and does exert influence over his subordinates. Further, if we agree to the premise that the true greatness of nations is in those qualities which constitute the integrity of the individual, then the citizen has an obligation to represent his country well as a soldier, and a *greater* obligation to represent it well if he is a leader.

Throughout history the rise and fall of all civilizations can be traced directly to the moral fibre of the people. With the strengthening of this moral fibre we have seen nations rise, and with its weakening we have seen the great empires of the world collapse from the rot of moral decay. When the individual and, in turn, society becomes morally corrupt, the nation's strength is sapped and moral degeneration becomes complete. This is perhaps the most important lesson history has taught us.

Today's Fateful Challenge

The young leaders of today are faced with the greatest challenge the world has ever known. Our civilization is being threatened by a relentless and evil force—a force completely devoid of morality. It seeks to destroy by undermining human spirit. It seeks to use the individual's mind as a battle ground and attempts to lower his will to resist its noxious precepts. It makes mockery of our morals, for the leaders of this evil force know that our strength lies in our moral fibre and this, history teaches, is what must be destroyed in order to

destroy a moral civilization. If morals can be destroyed first, then the materials of war are superfluous or at most are secondary instruments in the destruction of civilization.

We have the know-how, and we have the materials to make that know-how effective. But do we have the moral stamina to endure today's grim threat to Western civilization?

Can we resist the inroads made against our morale and our morals? We can. We must! Every leader must take positive action to not only destroy any existing moral decay, but to create a state of mind that will render the individual and, consequently, the Nation immune to it.

Our first line of defence is in our own mind.

The leader must know his business and the men must know that he knows. War is a terribly serious matter and our citizen-soldiers want their lives protected by experts. There may be the tendency to belittle the professional soldier in time of peace; but when war comes, our citizens want to feel that their destiny is in the hands of professionals. To become this professional, an officer must devote his life to constant study and self-improvement. He will need to prepare himself by study, by actual command of small units and, most importantly, by unending reflection on the art of war for the exacting requirements of professional leadership in future war.

—General Maxwell D. Taylor, US Army.

99. Aug 57.

AIR SUPPLY IN NUCLEAR WAR

Captain J. W. Humphreys
Royal Australian Army Service Corps

IF you suspect a colleague of being a genius or even an expert, ask him the question, "What about maintenance in nuclear war?" You will probably receive this answer: "Of course air supply will largely replace surface transport and helicopters will carry out the last leg."

Because we in Australia are not yet fully aware of the advances being made in the air portability and air supply fields, there is a tendency for us to regard the use of helicopters and other aircraft as the panacea for all problems of maintenance in nuclear war.

Time will tell, but at the moment, there are strong arguments against helicopters and other aircraft being used to replace surface lines of communication.

The Nuclear Climate

Field-Marshal Montgomery says that nuclear war will start with a destructive phase lasting about 50 days,

in which "a large number of weapons will be delivered by manned aircraft and missiles of both sides. There will be great destruction of life and property."

In the destructive phase, the phase with which we are most concerned, the best we can apparently hope for is air parity.

Air supply personnel are not happy about doing business under conditions of air parity or inferiority, for very sound reasons. Transport aircraft, which are either large end-loading, or small sideloading, are relatively slow and are unarmed. Therefore, to have a chance of being successful, tactical air supply in the destructive phase must be carried out by night.

Also in the destructive phase, base airfields will be attacked, and a large number of transport aircraft destroyed on the ground. This does not amuse the air supply people either. It affects the subject of aircraft availability.

Aircraft Availability

This is governed inter alia, by:—

- (a) Operational losses, due to enemy action or accident;
- (b) Maintenance; and
- (c) Availability of trained crews, both air and ground.

In nuclear war, aircraft availability is gravely affected by conditions prevailing at base airfields. It is fairly certain that a large number, if not all base airfields, will be contaminated by radio activity, and that servicing and refuelling personnel will be exposed to radio activity while working in the open. Such personnel will be able to work efficiently for a few hours a day only. It is clear that the availability of aircraft will dictate to what extent tactical air supply can be carried out.

A Forecast of Aircraft Requirements

Let us consider a division of 15,000 men, a range of 500 nautical miles, a mythical light aircraft of payload 1 ton, and a mythical rear loading aircraft of payload 7 tons.

Commodity	Lbs/ Man/ Day	Daily Div Tonnage	No. of Lt Ac reqd	No. of rear- loading Ac reqd
RAASC				
Supplies	7	47	47	7
Ammunition	11	74	74	11
Ordnance				
Stores (less vehs and ammo) . .	4.4	30	30	5
Engineer				
Stores . .	17	114	114	17
Medical,				
Postal and Canteen .	1	7	7	1
POL	11	74	74	11
TOTAL .		346	346	52

Such is the magnitude of the task of maintenance by air.

Obviously aircraft availability will not permit us to replace surface lines of communication entirely. The problem is to arrive at a workable system that combines available air effort with available surface means.

First, let us look at what should not be carried, and what should be carried by air.

Ammunition

The carriage of ammunition by air in World War II proved uneconomical, because only a very small quantity of ammunition could be carried by each aircraft. The situation has not greatly improved. Aircraft admittedly are much bigger, and most ammunition nowadays is capable of being dropped safely. The weight of the missile has, however, increased, and with the emphasis being placed more and more on "fire power," the quantity of ammunition required is not likely to diminish.

Against this, is balanced the greater destructive power of nuclear missiles.

Ammunition maintenance could well be carried out according to the following plan:—

- (a) Ammunition of all types to be dumped within the divisional defensive perimeter, preferably before fighting commences;
- (b) Replenishment to be carried out direct from base depots, by armoured vehicles with high cross-country performances;
- (c) Nuclear missiles to be dropped in emergency in divisional areas on heavy drop platforms.

POL

Field-Marshal Montgomery believes there will be very little movement of land armies during the destructive and exploitation phases of a nuclear war. Small formations, self-sufficient behind their perimeters, will have the task of holding and surviving.

There will not be the same demand for POL in the forward areas, therefore, as there will in the base areas.

Nearly all the refuelling of aircraft will take place in the base areas. What POL is required in the forward areas will be supplied by air, or carried overland by armoured vehicle train.

Dug-in pipe lines appear to be advantageous, but the side which has the pipe line has the responsibility of maintaining and defending it. In nuclear war, this problem may be insurmountable.

As with ammunition, the carriage of POL by air is wasteful, and must only be resorted to in an emergency.

Engineer Stores and Equipment

Most engineer stores are heavy and are therefore not generally suitable for carriage by air. They will need to be carried overland. Such items as mines and demolition materials, which may be required urgently to maintain the aim of holding and surviving, could well be supplied by air.

What Should Be Carried

Because of their size and weight and their value to the troops in the forward areas, the following items

should, as a general rule, be carried by air:—

RAASC Supplies

Ordnance Stores (excluding ammunition and vehicles)

Medical Stores

Canteen Supplies

Mail (if any)

The daily aircraft commitment could now be reduced by over fifty per cent. Further reductions may be made by reducing the weight of individual items. Greater use can be made of dehydrated foods and vitamin or other tablets. With the present 10-man pack weighing approximately 40 lb, it can be seen that a huge weight of supplies is required for daily maintenance. This weight should be reduced, so that the soldier is able to carry on his person sufficient tablets and dehydrated food to last him the whole of the destructive phase.

Dehydrated food introduces the subject of "The Effects of Radio Activity on Water," which is described in detail by Lt J. B. K. Ley, in the February AAJ. He assures us that water contaminated by radio activity can be sterilised by a number of methods, including distillation. It therefore follows that, unless a defended locality lies in an area devoid of supplies of natural water, there is no requirement for air supply of water.

A System of Operation

In nuclear war, the most economical system of maintenance would probably be that which delivers supplies and stores direct from base depots to forward defended localities.

Using such a system, the tasks will be:—

- (a) Replenishment of base depots;
- (b) Replenishment of forward administrative areas; and
- (c) Distribution to units.

The following conditions will probably prevail:—

- (a) Major roads, railways and air-fields unserviceable;
- (b) Towns, cities and ports destroyed;
- (c) Line communication non-existent, radios jammed;
- (d) Underground base depots, dispersed over a wide area.

Replenishment of Base Depots

Great difficulty will be experienced in replenishing by surface sea transport, due to the action of enemy submarines. Despite the progress made in underwater detection, enemy submarines will probably prevent replenishment by sea.

Replenishment of base depots must therefore be carried out largely by air transport operating at night, and dropping rather than landing cargo. Depots would need to be sited beyond the range of enemy land-based fighters, to allow freighter aircraft to operate unmolested.

It is conceivable that some type of cargo submarine could be used.

Base Depots located at home will need to be replenished by a combination of aircraft and vehicles with good cross-country performances. Were it not for the fact that nuclear war has concentrated time, animal transport would prove useful.

Replenishment of Forward Administrative Areas

Light aircraft operating from unprepared strips adjacent to base depots will land supplies and stores on similar strips located in the divisional or brigade areas.

Cargo will be restricted by the dimensions of the fuselage and the payload, but a great variety of RAASC supplies, RAAOC and RAAMC stores can still be carried.

The light aircraft used will need to be capable of at least a 500 mile turn-round with a satisfactory payload.

Distribution to Units

Supplies and stores should be distributed by unit transport. If roads become impassable it may be necessary to operate cross-country supply vehicles on a "milk run" system.

A requirement will exist for the emergency supply by helicopter, of patrols and isolated units.

The Use of Helicopters

Helicopters have five main roles:—

- (a) Tactical support;
- (b) Logistic support;
- (c) Evacuation of casualties and prisoners of war;
- (d) Artillery and close reconnaissance; and
- (e) Liaison and intercommunication.

Two factors will restrict the amount of helicopter support available for any one role.

- (a) For a given load over a given distance, helicopters need ten times more fuel than road vehicles;

(b) Demand for helicopters will exceed supply.

What will be the order of priority?

In nuclear war the commander's task is to locate the enemy quickly, and destroy him with nuclear weapons, before he himself is destroyed. Therefore there will be a constant demand for close reconnaissance.

Because nuclear weapons will have caused great damage to communications, helicopters will have to be used extensively for liaison and intercommunication.

Casualties will be extremely high in both forward and base areas. In fact, there may not be any real advantage in the large-scale evacuation of casualties to base hospitals. The Divisional Administrative Area will then have to be capable of holding underground all but the most serious casualties. There will always be a requirement for the helicopter evacuation of casualties from the forward defended localities to Advanced Dressing Stations.

With the total number of helicopters available likely to be small, it appears as if it may be quite wrong to rely on helicopters for logistic support. They may have to be used occasionally for emergency air supply, but their use in routine air supply seems unrealistic.

Organization

When the Army Air Transport Organization was formed after the Berlin Air Lift, it had two main objects:—

(a) To co-operate with the Air Force on the Transport Force headquarters level;

(b) To exercise centralized control over tactical air supply. The organization is a giant empire. In its simplest form, over 1,000 Army personnel are required.

AATO is an organization superimposed on other maintenance organizations. The executive parts of AATO are the air despatch companies and air maintenance companies, and they are administered and commanded by a very powerful staff indeed.

Damage to communications will probably prevent AATO from effectively controlling base depots and airfields. In the absence of reliable communications, helicopters will probably be used for control and liaison.

The use of rear-loading aircraft with automatic ejection facilities, and the emphasis on air landing rather than air dropping forward of base, will reduce the number of air despatch personnel required in Rear Airfield Supply Organizations. RAASC depot personnel who, it will be remembered, may be located adjacent to a landing strip, should be able to carry out the loading and packing duties which are normally the responsibility of personnel of the air despatch companies.

Therefore, in nuclear war, it may well be possible to do away with air despatch companies entirely.

One thing is certain, the AATO in its present form will not survive the administrative paring demanded by nuclear war.

Conclusion

The main problems associated with maintenance in nuclear war, appear to be:—

- (a) Availability of suitable aircraft in sufficient numbers, to carry out Tactical Air Supply;
- (b) Limitations imposed by aircraft payloads and dimensions;
- (c) The need for dispersion;
- (d) Difficulties of co-ordination and control under chaotic conditions;
- (e) The likelihood of base installations and services being destroyed by nuclear attack.

There is no doubt that only administrative generalship of a high order can hope to overcome such formidable problems.

COMPETITION FOR AUTHORS

The Board of Review has awarded first places and the prizes of £5 for the best original articles published in the May and June issues as follows:—

May—Military Air Transport—Everybody's Darling, Nobody's Baby, by Lieutenant-Colonel A. Green, Royal Australian Engineers.

June—Major Austin Chapman, Royal Australian Engineers, for his series of articles on Modern India.

Science for Army Officers

At the Royal Military College of Science officers are studying the fundamentals of science and engineering—knowledge which is essential to enable them to keep pace with rapid developments in weapons.

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IN his memorandum on the Army Estimates published last week, the Secretary of State for War (Mr. John Hare) said:

"We plan, therefore, to produce a family of weapons with no supplementary or overlapping members. This family will provide an armoury which is a fine balance between the needs of limited operations on the one hand and global war on the other."

Even allowing for the vagueness of this statement, it is plain that here, for someone, is a very tall order, when one considers that the Army's duties may range from police action in the jungle to thermonuclear war in Europe. At the same time, the Estimates have been cut by one-fifth.

Much of the responsibility for introducing the new "family of weapons" falls squarely on the shoulders of the Army's technical staff officers (TSOs). They are men of the rank of major and above whose names are followed in the Army List by the letters "ptsc"—"passed, technical staff course"—which means that they have studied successfully at the Royal Military College of Science. They have been trained particularly so that they can deal with scientists and engineers and make sure that the fighting soldier gets what he wants.

Since 1946 the College has occupied converted military barracks at the village of Shrivenham, near Swindon. It is a direct descendant of the Artillery College at Woolwich

and, indirectly, of the Military Society of Woolwich. The latter flourished for a few years after 1772, and played an unsung part in equipping the Army for Waterloo.

Although increasing specialisation in science has meant that officers are no longer elected to the Royal Society by the dozen, as they were at one time, the College sees to it that science and engineering play a more important part in their activities than ever before. It is now the biggest officer training establishment in the Commonwealth.

It is not its purpose to turn out scientists in battledress, or even super-sappers: it is to give soldiers an academic education and military staff training appropriate to the modern age. In this it follows the report of the Guy Committee which recommended after the war, with considerable foresight, that technical officers must be trained in the fundamentals of science and engineering. It is not enough to teach them the details of this radar or that gun, if they are to keep abreast of rapid developments in weapons.

There are three main kinds of courses. About 180 of the students are young subalterns who have been selected to read for an engineering or science degree at London University. This upgrading at Shrivenham of the products of Sandhurst is not the Army's only source of graduates: a few are sent from Sandhurst to Cambridge, while others join the Army after graduation.

Having served as regimental officers and become captains, officers can sit the examination for the Staff Colleges. If they pass they may go

to the General Staff College at Camberley. Alternatively, they arrive at Shrivenham for the Technical Staff Course.

Here one finds about 50 officers on the course wearing the flashes of many arms. Just as the Army needs signals officers trained to assist in the development of new telecommunications equipment, so it needs infantry and armoured corps officers with sufficient knowledge of engineering to argue the "user's" point of view in the design of a machine carbine or an armoured car. Those who are not technical graduates are given a preliminary grounding in the academic aspects: then they go on to specialise in the divisions of Weapons, Fighting Vehicles or Fire Direction.

The present two-year Technical Staff Course at the Royal Military College of Science covers basic science in the first year and technology in the second. During this second year the student spends over half his time with one of the three military divisions of Weapons, Fighting Vehicles, or Fire Direction (which covers electrical and electronic devices). A Technical Staff Officer is predominantly concerned that the equipment produced is what the fighting man wants, and that it is produced as economically as possible. To assist in training the Technical Staff Officer in these matters the College has run a series of Design Exercises, the object being to compel the students to go step by step through work which would have to be done in real life in either the War Office or the Ministry of Supply.

The setting usually poses some known military requirement with

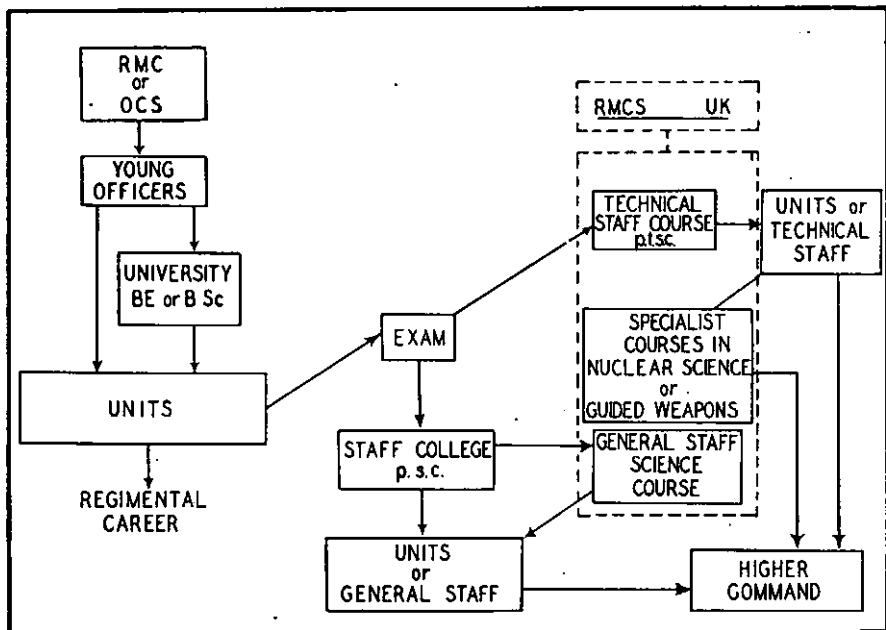
an explanation of the difficulties or reasons why a new equipment is necessary, besides stating the essential conditions that the new equipment must meet. For example, the setting for a Fighting Vehicles Design Exercise might call for a new medium tank which must be air-portable. It would explain that in the past only very light tanks had been air-portable, but that the increasing size of aircraft together with the demand for greater strategic and tactical mobility have so altered the picture that an air-portable medium tank has become both a possibility and a requirement. The setting might lay down the maximum overall weight and dimensions, or the phase of a battle in which air-portability would be necessary, or the kind of aircraft into which it must fit. There would also need to be a general indication of the minimum armour thickness and of the fighting effectiveness required. Its performance on roads or cross country, range of action and whether or not the gun must have all-round traverse would probably be outlined.

The students, working individually or in small syndicates, are required to indicate the "Military Characteristics" of the new equipment. The writing of these "Military Characteristics" usually entails dividing the requirements into "essentials" and "desirables." The proper allocation of these categories is a delicate, vital matter. Failure to appreciate their significance might cost a country millions of pounds.

The students' papers on the "Military Characteristics" are then corrected and returned, and the next stage is a design study to meet the "Military Characteristics." This study,

which is in considerable detail and is supported by technical calculations, decides which of the various possible solutions should be adopted. It is equivalent to the work done at this stage in the Ministry of Supply on an actual project. A heavy responsibility rests on the officer chosen as leader, who must divide the students on the course into syndicates and allocate their work. To a lesser extent the syndicate leaders are also in a delicate position; if they undertake too detailed a study, results will not be available by the required date and the whole exercise will be put out of gear. For example, in the setting of the exercise referred to above, concerning an air-portable medium tank, weight would certainly be an important factor, so the course leader should tell his syndicates to carry out studies of the weight involved, and he should give a specific date by which he must have the results of these studies. One syndicate might take on the engine, transmission, and tracks, another the hull, a third the turret arrangements and a fourth the crew arrangements and stowage. Each syndicate would explore perhaps three alternative designs, and as well as assessing the weight of each would have to satisfy themselves that any they put forward would meet the Military Characteristics. Co-ordinating meetings are frequently arranged so that the requirement of all syndicates are kept in line with the overall requirement. These meetings are also valuable to the staff running the exercise, since they provide opportunities of keeping the exercise on sound lines and of assessing the students under realistic conditions.

On the given date the whole course presents its design studies to



HOW RMCS SERVES THE ARMY—Officers who qualify at the Entrance Examination may be selected to attend a Staff College for one year or RMCS for two years.

Those who pass the Staff Courses find the road open to higher Staff and Command appointments.

the staff and announces recommendations. The staff accepts or modifies the solution and the course continues to the final stage of more detailed design.

The design cannot be fully detailed, due to shortage of time, but the students are encouraged to concentrate on the critical and novel points. Syndicates check their proposals and design them in as great detail as time permits. Wooden mock-ups of components are often required, especially where the human body is a criterion, e.g., to decide whether loading a tank gun in the extremely limited space would or would not be feasible.

At the preliminary design stage, and even more during detailed design, the students are allowed to ask for relaxations of the Military Characteristics, but to secure a relaxation they must convince the staff that it is unavoidable.

The design study must be completed by a given date, which is governed by the time needed to prepare a report containing the setting and the student's solution, with calculations and drawings. A report of 200 pages is usual, however much the staff try to condense it. This is sent to all those invited to attend the presentation, who normally include senior officers and officials of

the War Office and Ministry of Supply. For the presentation, a full-scale mock-up of wood and canvas may be made, and every aid to clear and rapid exposition in the way of diagrams and charts is used. The students describe their solution, explaining why they have adopted certain features and remarking on any special difficulties; they answer questions and ask for criticisms. The presentation is then open to free discussion, and a senior officer assesses whether the solution is sound and valuable.

The time scheduled for the exercise is a little less than 100 hours out of a course total of nearly 1400 hours. Such is the enthusiasm of the students that they usually double or treble this out of their spare time.

These Design Exercises bring the subject of the procedure to life; teach individual students to work as a team; bring into use and consolidate a large part of the knowledge taught on the course; provide an opportunity for the staff to assess students under realistic conditions; give an opportunity for investigation of problems which may be of interest to the War Office and Ministry of Supply; and act as a forum for forward thinking.

Similar "Design Exercises" dealing with industrial instead of military problems could easily be imagined. Wherever students are taught technology, they and their teachers might find such exercises of as much value as does the Royal Military College of Science.

The third main type of course is the "specialist" course. Technical staff officers may return to the College for additional training in guided

weapons or nuclear science and technology.

The three military divisions have already been mentioned. There are four academic departments: mathematics and physics (Professor Tranter), chemistry (Professor Baughan), mechanical engineering (Professor Thomson) and instrument technology (Professor Hayes). These names are rather misleading. Thus, "mathematics and physics" includes aerodynamics and ballistics; "mechanical engineering" includes civil engineering; while "instrument technology" mysteriously embraces electrical and electronic engineering as well as instrumentation.

The academic staff carry out their own research work. They publish a very creditable number of original papers in the scientific journals, as well as many "internal" reports—in spite of a chronic shortage of research students. (The shortage is such that the demonstrators include graduates serving as National Service sergeants.) The subjects of research range from abstract algebra to vacuum concrete, and from the solution in thermodynamics of high polymers to the behaviour of a human operator in an automatic control system.

But the staff also spend a great deal of time devising better methods of instruction. The Army has a good record in the use of modern teaching aids, and at Shrivenham these are applied even in the undergraduate courses. The arrangements for practical work, for instance, cut out much of the time-wasting which most university students suffer; experiments are designed to bring out the principles and avoid trivialities.

The engineering laboratories are very well equipped with tools and engines; like the workshops of the military departments they are veritable museums put to daily use. Instructional models are used extensively, and the instructors exploit techniques like the photoelastic effect, which reveals graphically the stresses in a Perspex replica of a mechanical part.

In some respects Shrivenham is outstanding. Its servo-mechanisms ("robots") laboratory is unequalled, so much so that officers from the other Services and civilian engineers from industry go there to train.

The success of the technical staff course at Shrivenham teaches at least one very important lesson: that older men can master technical subjects. It remains true that when one is over 25 it is difficult to make a start in a new subject, but when one is as enthusiastic as the officers studying at Shrivenham it is far from impossible.

The military instructional staff are also required to do studies ("research," if you like) into the technical and tactical implications of new developments and contribute ideas for the future. In the words of the White Paper, "Scientific advances must fundamentally alter the whole basis of military planning."

Leaving Shrivenham, the qualified technical staff officer may go to the Ministry of Supply headquarters, where he will be concerned in guiding research and development for the Army; or he may go and work in one of the research and development establishments. On the staff of the War Office he can participate in the formulation of weapon policy, or he

may go abroad to a NATO or Commonwealth country for liaison duties. In peacetime there is a place for him at large headquarters abroad, where he reports on the performance of new equipment; in wartime, as warfare becomes more complex, he may well be needed closer to the front.

Developing new equipment is an onerous task. The opportunities and the dangers of making mistakes increase yearly, and if they are made, lives and battles may be lost "and all for the want of a nail." The soldier whose equipment fails him at the hour of crisis will not be appeased by technical explanations. Nor will he like it if he finds that new equipment is obsolete by the time he gets it. With everything progressing so fast, this is one of the designer's biggest worries.

The sort of difficulty the new technical staff officers will have to tackle is illustrated by army trucks. Those used in the Second World War were virtually civilian production models, painted green or brown. On rough ground they took a terrible beating. The reaction was to specify requirements for army vehicles which took account of every possible contingency—submersion, for instance. As a result some new vehicles were too elaborate and expensive. In the future "family" a compromise will be needed.

Technical staff officers are being turned out at the rate of about 60 a year. The College ensures that there is a cadre of officers for whom such things as guided weapons and nuclear weapons have no mysteries and who can talk sensibly about their tactical uses.