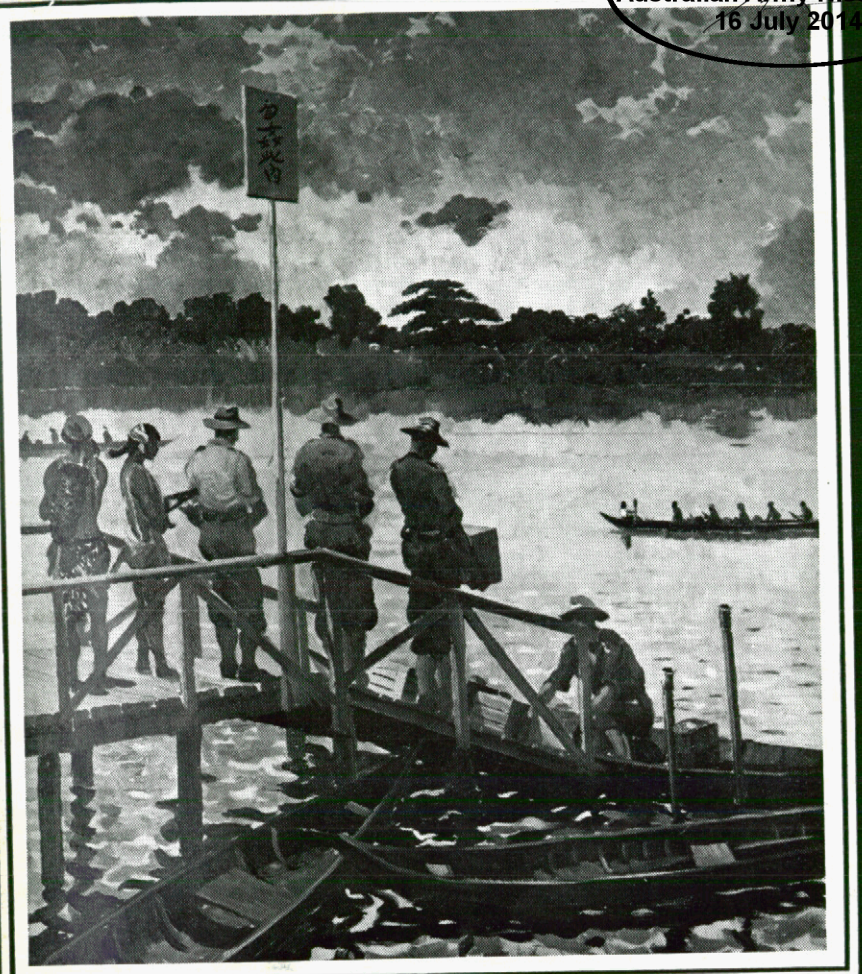

ARMY JOURNAL

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Cover: 'Embarkation Australian-Dyak Patrol, Kuala Belait, Brunei, June 1945. War artist James Flett.

ARMY JOURNAL

A periodical review of military literature

No. 273, FEBRUARY 1972

Contents

(Australian War Memorial)

The withdrawal to Singapore Island exposed the island's airfields to shelling as well as air bombardments, and most of the defending air forces were withdrawn to Sumatra. Thenceforward Singapore Island was

Papua New Guinea: Towards Self Government

Captain M. V. Moore
Royal Australian Army Educational Corps

AUSTRALIANS generally know little of Papua New Guinea. Few realize how close it is to self-government. Australian press coverage of events in Papua New Guinea is surprisingly poor considering its proximity, the extent of our involvement in the area and the pace of its recent political development.

In February and March 1972, elections are being held in Papua New Guinea for the third House of Assembly. These elections are especially significant in the Territory's political development. That third House of Assembly will prepare Papua New Guinea for full internal self-government. It may, depending upon its composition, actually carry the territory to self-government. The elections themselves are also significant for their conduct and results will indicate whether a party system has taken root in Papua New Guinea.

The emergence of a central legislature and executive, composed mainly of indigenes, is a very recent development in

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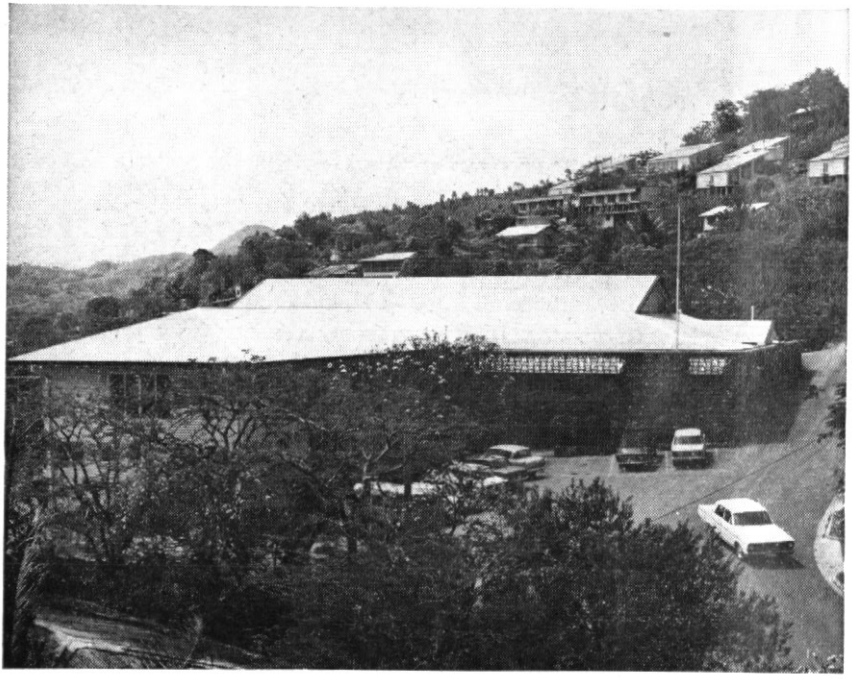
Captain Moore graduated B.A. (Hons) from the University of New England in 1962. He was employed as a Tutor in the History Department at U.N.E. in 1963 and 1964. After completing a Diploma in Education in 1965, he taught in a New South Wales high school. He joined the ARA in 1967 and served at the Southern Command Education Section (Puckapunyal). He is at present in the Correspondence Cell of the Army School of Education.

Papua New Guinea. In the 1950s, Australian Ministers for Territories could still speak of the possibility of the Territory remaining Australian for 'more than a century'. About 1960, for reasons which are still the subject of historical controversy, the Australian government began to accelerate the political development of the Territory very greatly. In 1961, there was established a new type of legislature which included six elected indigenes and an executive, the Administrator's Council, which had to include one elected indigene.



(Dept of External Territories)

Papua New Guinea House of Assembly, Port Moresby.

The election, in 1964, of the first House of Assembly marks the foundation of the present type of political system. This House had ten official members nominated by the Administrator and 54 elected representatives. In ten electorates, the 'special electorates', candidates had to be non-indigenous. The remaining 44, the 'open electorates' could be contested by any

adult. Voting in both types of electorate was by adult suffrage on a common roll.

A special effort was made to place all the Territory's adults on the electoral roll. At the election, with non-compulsory voting, 72% of those enrolled voted. Six of the open seats were won by non-indigenes, giving a first House of 26 non-indigenes (ten official, ten special and six open) and 38 indigenes.

The executive arm of government, the Administrator's Council, was made more representative. Seven non-official members, all to be elected members of the House, were now to be included, giving non-official members a majority in the Council. At least five of the seven elected Council members were to be indigenes. The Administrator was also empowered to appoint a number of members to departments to learn something of their administration. He appointed ten indigenous members as Under-Secretaries 'to understudy those official members who act in the legislature in a role resembling that of Ministers'.

In 1965, the House established a Select Committee to draw up 'constitutional proposals to serve as a guide for the future constitutional development of the Territory'. The recommendations of that Select Committee were tabled in 1967 and formed the basis for changes made for the second House of Assembly.

The second House, elected in 1968, had 84 elected representatives. The ten special electorates were replaced by 15 regional electorates. The racial qualification for special electorates was replaced by an educational qualification. Candidates for the regional electorates were required to hold a Territory Intermediate Certificate or its equivalent. The number of open electorates was increased to 69. The ten official members of the House, nominated by the Administrator, were retained.

Further important changes were made in the executive in 1968. The Administrator was to appoint seven elected members of the House to be ministerial members. Ministerial members were to 'be responsible with the departmental head for overall departmental activities and for the framing of policy proposals including proposals for expenditure. In the House of Assembly

. . . they would introduce and have carriage of legislation'. These ministerial members were to be members of the new executive, the Administrator's Executive Council (AEC). The AEC was to be 'the principal instrument of policy of the executive government of the Territory' though it remained technically responsible to the Administrator and, through him, to the Australian Government.

Provision was also made for the appointment of up to ten assistant ministerial members 'to provide a form of junior ministerial office'.[1]

Although all ministerial members were technically responsible to the Administrator and appointed by him, an attempt was made to make them, in effect, partly responsible to the House. A House Standing Committee of five members nominated the ministerial members to the Administrator. The official members, the ministerial members and the assistant ministerial members sat together in the House and were expected to act as a *de facto* government group in it.

Early in 1971 the Australian Government further extended the powers of ministerial members. They were made 'fully responsible to the AEC for the day to day running of the Department instead of acting jointly with the Departmental Head and sharing the responsibility with him'.[2]

Mr Gorton, as Prime Minister, visited the Territory in July 1970. In a major policy speech in Port Moresby he indicated that ministerial members or the AEC should have full authority in certain areas:

> . . . the subjects on which we think that authority to take decisions should reside in the Ministerial Members or the Administrator's Executive Council are: education (primary, secondary but not tertiary), public health, tourism, co-operatives, business advisory services, workers' compensation, industrial training, posts and telegraphs, Territory revenue, price control, coastal shipping, civil defence, corrective institutions, registration of customary land, land use, leasing of land, town planning and urban development.[3]

The importance of this change has not been widely appreciated. In the fields specified, Papua New Guinea has, in effect,

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1 'Systems Of Government', a collection of papers prepared for the Select Committee on Constitutional Development, Appendix 1 to Paper 35.
2 ibid, Appendix 4.
3 *Australian External Territories*, vol 10, No 3, August 1970, p.19.

already achieved self-government. Thus, for example, the Minister for External Territories no longer answers questions on notice in the Australian House of Representatives dealing with those subjects. He relays such questions to the appropriate ministerial member in Papua New Guinea and gives the Australian Parliament the ministerial member's reply.

Like its predecessor, the second House of Assembly established a Select Committee on Constitutional Development. The Committee of 14, ten of them indigenes, represented most of the political viewpoints in the Territory. It presented its final report in March 1971. The House accepted its report and recommendations with only one amendment. A proposal that the Territory be called Niugini was not accepted and the Territory's official name is now, though perhaps still temporarily, Papua New Guinea. On 27 April 1971, Mr Barnes announced in the House of Representatives that the Australian Government had accepted the Committee's recommendations as passed by the House of Assembly.

Perhaps the most significant aspect of the Committee's report was its first recommendation:

> That the development of the Territory be geared to preparing the country for internal self-government during the life of the next House of Assembly so that should it become a reality earlier than expected, or if it is in fact requested by the people then, the move to internal self-government can be made at that time with the least possible amount of administrative disruption.[4]

The acceptance of this recommendation has taken most of the heat out of, if it has not quite ended, what had become a major political issue in Australia and the Territory — the establishing of a timetable for self-government. Mr Barnes told a seminar of the Associated Chambers of Commerce in Brisbane on 1 June 1971:

> In effect these recommendations set, for the first time, an approximate timetable. This will require the Commonwealth and the Administration to prepare a programme for full internal self-government in the period 1972-76, but the execution of that programme will have regard to the state of opinion as it develops after the 1972 House of Assembly elections and to the policies of the political leaders who then emerge. At present, majority opinion in Papua New Guinea favours a later period — 1976-80, but opinion has been changing and there could be full internal self-government within the next five years.

4 'Constitutional Development in Papua New Guinea', *Current Notes on International Affairs*, vol 42, No 6, June 1971, p.317.

Probably the main change in the Territory which influenced the Select Committee and the Australian Government to specify a period in which self-government might come was the accelerating political awareness, especially in the Highlands. Another factor which influenced the Committee was the ALP policy, as adopted by the June 1971 Federal Conference, to 'ensure the orderly and secure transfer of Papua New Guinea to self-government and independence in its (the ALP's) first term of office'.[5] Thus the Committee reported:

> The Committee believes that the rate of political development and awareness in Papua and New Guinea is accelerating . . . . Because of this rate of advance, the possibility may exist that the majority of the people of the Territory may request that the country move to internal self-government before the end of the life of the next House of Assembly. Also the Committee is aware that there could be a change of government in Australia which could result in internal self-government becoming a reality before the majority of the people are prepared to accept it.

There are to be changes in the composition of the next House of Assembly. The number of regional electorates will be raised to 18 with the educational qualification for candidates remaining. There will be an increase of 13 in the number of open electorates giving 82 open electorates each with about 30,000 people. Thus the new House will have 100 members directly elected.

For the 1972 elections the voting age has been lowered from 21 to 18. The age group thus enfranchised includes many of the Territory's educated indigenes whose inclusion in the electorate might have an effect out of proportion to their numbers.

The number of official members in the third House has been reduced from ten to four. There is still some need felt for a few specialists in fields such as law and finance in the House and the AEC. The remaining official members will help provide such expertise.

Provision has been made for the House of Assembly itself to nominate up to three members for special purposes. Any such nominated members must have been continuously resident in the Territory for five years, must not be public servants and must not be defeated candidates for election to the House which nominates them. Once nominated, the members hold office on exactly the same basis as the elected members. Any or all of

[5] *The Age*, 29 June 1971.

(Dept of External Territories)

View of the House of Assembly from the Speaker's Gallery. Mr Yauwi Wauwi Moses (Chuave) speaking.

them may be appointed ministers. Thus the House will be able to bring in for special, probably often for ministerial, duties people with qualifications or expertise who might not have the popular following to win, or the inclination to contest, elections.

The term ministerial member is to be replaced by minister, indicating a more complete control over a department. The Administrator will appoint 17 ministers who will be nominated to him by a House Committee. Those ministers will then elect one of their number to be the Deputy Chairman of the AEC. This is an entirely new position not found in previous executives. The man who occupies it will be the premier parliamentarian. In many important areas his duties will equate those of a prime minister, for provision has been made to give him a certain control over the other ministers.

The new AEC will consist of the Administrator, the Deputy Chairman, nine other ministers and three official members. It will be, in effect, a cabinet while the other seven ministers will make up an Outer Ministry. The Minister for Territories, on the

advice of the Administrator, and in consultation with the Deputy Chairman, will select the nine ministers to sit in the AEC. The same procedure will be adopted in allocating portfolios and making changes in portfolios. Possibly the advice of the Deputy Chairman will be taken in these matters making him, in effect, a Prime Minister, though he will remain legally responsible to the Administrator until full self-government is attained.

How the system will work in practice will largely be determined by the results of the 1972 elections. If a single party can win a majority in the House it will be able to form a Government. Its parliamentary leader would probably become Deputy Chairman of the AEC and should be able to exercise a fair degree of control over the legislature and the executive. Such considerations involve an examination of the strengths and aims of present Papua New Guinea political parties. This will be the subject of a further article. □

DARWIN BOMBED

The 19th February 1942 will be remembered as the first time in the history of Australia that the blows of war actually fell on Australian soil. But, at the time, the historic importance of the occasion was of less moment than the interpretation of the intention behind these blows. It later became clear that the Japanese object in bombing Darwin was to take advantage of the opportunity target offered by the shipping in the harbour and to neutralise a base which might prove troublesome to them in their attacks on Timor and Java. But it was understandable that there should have been many who saw the raids as the beginning of a 'softening up' process preliminary to Japanese landings, particularly as they were followed within two days by the invasion of Timor. Such swiftness would not have been out of keeping with the Japanese methods. The invaders had not waited for the fall of the Philippines before they pushed on to occupy Rabaul nor for the fall of Singapore before they struck into Burma. Then again some noted that the raiders had seemed to spare certain important installations, such as the oil tanks, and inferred that they wanted them for their own future use.

Dudley McCarthy, *South-West Pacific Area — First Year*

Captain K. D. Nelson, ED (RL)

WATER supplies to isolated garrisons have proved to be a continual embarrassment to field commanders since the earliest days of warfare. Field Marshal Viscount Montgomery of Alamein cited the siege of Megiddo (1468 B.C.) as an early instance of this problem. Eventually, the defenders overcame their water shortage by constructing a vertical shaft 60 feet deep within their fort and then drove a horizontal tunnel 140 feet long to an existing water supply, well outside their defensive position.[1] The weakness of this solution was that the source of supply still remained in enemy territory and the opportunity was ever present to poison or pollute the water.

The need for adequate water supplies has become critical in modern warfare due to higher standards of hygiene and increased demands for better quality water for supporting plant

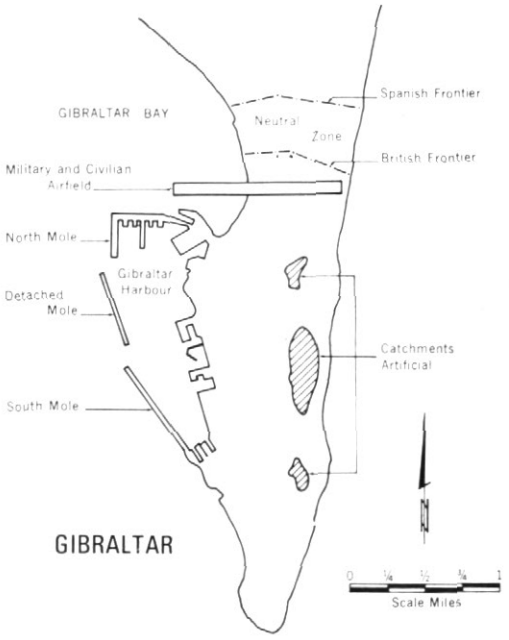
[1] Montgomery of Alamein. *A History of Warfare.*

Captain Nelson graduated from the University of Wales where he gained the Colonel Page Prize in Engineering. He initially served with the Royal Air Force and was later commissioned in the British Army. He joined the Reserve of Officers (RAE) in 1952 and returned to the Active List in 1953 with the 22 Construction Regt RAE (SR). Captain Nelson saw active service in Burma during World War II and was at the siege of Imphal.
In civil life he is Engineer-in-Charge, Farm Water Supplies with the Soil Conservation Authority of Victoria, and has previously contributed to Army Journal.

and equipment. Singapore in World War II failed to live up to the concept of an imperial bastion because instead of being an impregnable fortress it was, as Churchill proclaimed, 'a hideous spectacle of an almost naked island'. The truth was, apart from other defence considerations, that the water supply came from the Malayan mainland by pipeline to reservoirs on Singapore Island and once this pipeline was cut by the enemy, the fall of the city was purely a matter of time. On 31 January 1942, the British forces retreated from the mainland to Singapore Island, blowing up the northern end of the causeway joining the island and the mainland. By 14 February, the military situation had deteriorated to an extent that the Governor in Singapore, Sir Shenton Thomas, sent the following cable to the UK:

General Officer Commanding informs me that Singapore City now closely invested. There are now one million people within radius of three miles. Water supplies very badly damaged and unlikely to last more than twenty-four hours.

Many dead lying in the streets and burial impossible. We are faced with total deprivation of water, which must result in pestilence. I have felt that it is my duty to bring this to notice of General Officer Commanding.[2]



The next day — the 15th — Singapore surrendered.

Yet, Gibraltar, in spite of years of blockage by Franco Spain has had no such water supply problem. Fortunately, elaborate artificial catchments had been constructed to forestall such a contingency. Artificial catchments are natural catchments or part thereof which have been treated to reduce or eliminate the infiltration of rain-

[2] Moore, D. & J. *The First 150 Years of Singapore.*

fall into the surface. Gibraltar has approximately 100 acres of metal roofing, concrete paving and treated rock surface on the eastern slopes of its peninsula. This runoff is collected by gutters and passed to reservoirs with a total capacity of about 16,000,000 gallons.

The practice of developing artificial catchments dates back to the early days of civilization. Around 2000 B.C. inhabitants of the Negev Desert in Israel cleared rocks and gravel from the hillsides in order to smooth the surface and so increase the runoff. Contour channels were then constructed to collect and convey this water to irrigation areas. This system may have been crude but was sufficiently useful to enable these people to survive in a region with an average annual rainfall of four inches.[3]

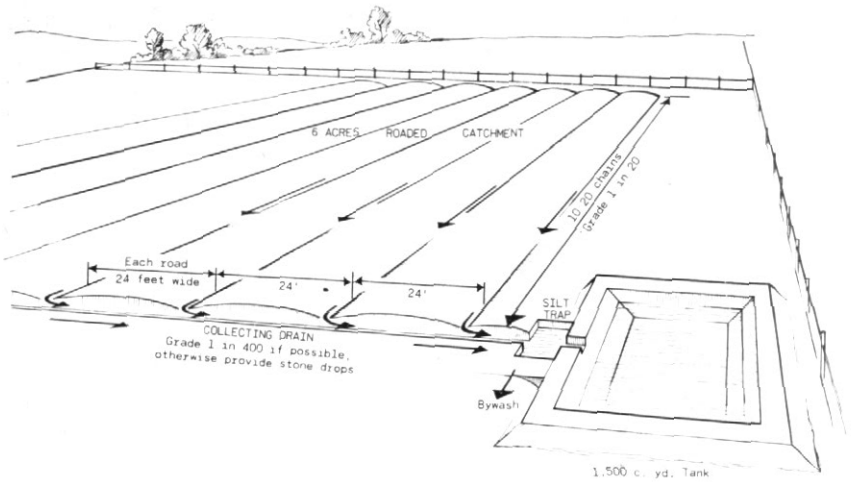
To help those involved with military water supplies, it is proposed to review current research on new techniques and new materials for artificial catchments.

Probably the simplest and cheapest artificial catchment is the cleared, smoothed soil surface. First, the vegetation is removed by a soil sterilant and then the soil is smoothed and compacted. The resulting runoff may be collected either by taking advantage of any local watercourses or by constructing channels.

Hillel, an Israeli researcher, reports that by using this treatment he was able to increase the runoff from 5 per cent to 21 per cent.[4] Per cent runoff is that component of the rainfall which will flow off the surface of the soil and can be collected and stored for future use. Myers carrying out studies near Phoenix, Arizona, also showed that it was possible with this simple treatment to increase the runoff from 20 per cent to 35 per cent.[5] This catchment has an annual cost of one cent per square yard.

An interesting modification of this treatment was developed by the Department of Public Works in Western Australia. This

[3] Evenari, Shanan, Tadmore & Aharoni. *Ancient Agriculture in Negev.*
[4] Hillel, D. & Associates. *Runoff Induction in Arid Lands.*
[5] Myers, Lloyd E. *New Water Supplies from Precipitation Harvesting.*



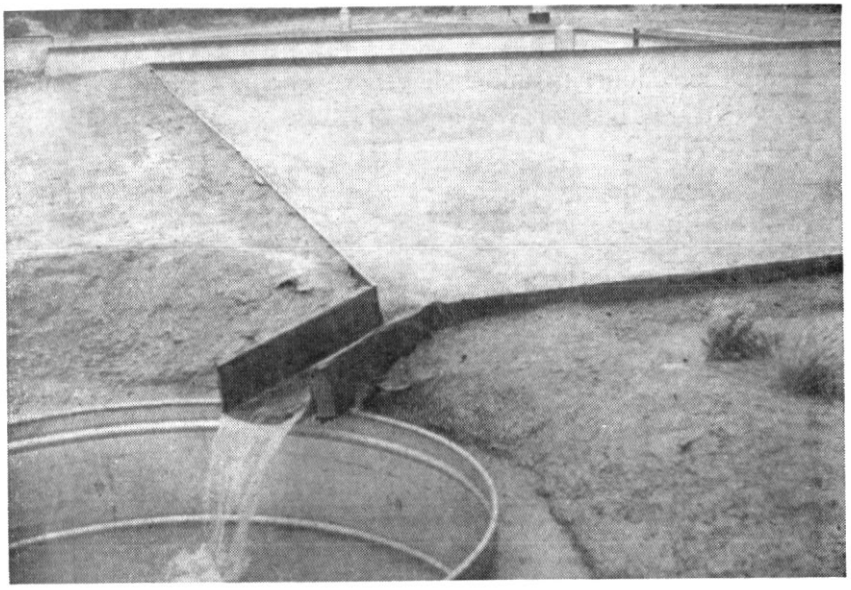
ROADED CATCHMENTS

technique has been called 'roaded catchments' because the catchment area was graded and compacted into a series of parallel roads about 25 to 30 feet wide with side slopes of 1 in 20 to 1 in 10. The drains between the roads have a grade of about 1 in 200 which collects the runoff and passes it on to a larger channel with a grade of approximately 1 in 400 leading to the storage. The cost of 6 acres of roaded catchment shown in the diagram was £100 in 1955.[6]

Another method of increasing runoff from many clayey soils is the introduction of sodium salts. These salts have the effect of causing clay to swell and so seal the soil pores. Hillel and Myers in Israel and Arizona respectively have recorded 70 per cent runoff by using 400 pounds of sodium carbonate per acre.[7] Salt treatment is very attractive because of its low cost. However, it has two disadvantages, first the effectiveness of the treatment deteriorates after the first year and secondly there is a definite soil erosion hazard involved.

The permeability of soil can also be reduced by adding water repellent chemicals so creating water repellent or hydro-

[6] Public Works Department of Western Australia. *Roaded Catchments for Farm Water Supplies.*
[7] Myers, Lloyd E. *Precipitation Runoff Induction.*



(US Water Conservation Laboratory, Phoenix, Arizona.)

Water running off a plot of sandy loam. This soil was sprayed with a water repellent chemical.

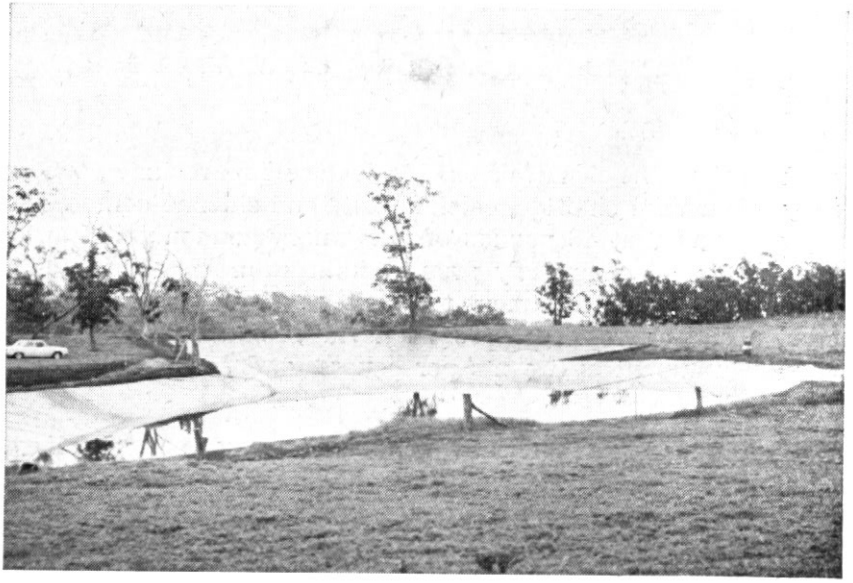
phobic soils. The chemicals used include sodium rosinate, quaternary ammonium chloride, calcium salts and silicone compounds. Myers found that 46 pounds of quaternary ammonium chloride per acre could completely prevent infiltration into sandy soil.[8] Unfortunately this treatment too makes soil very susceptible to erosion and appropriate precautions must be taken. The cost of this treatment is 5 cents per square yard and lasts about 3 years.

Bitumen is a material which has been used successfully to create an artificial catchment. However, before treating any area it would be prudent to explore the possibility of using existing pavements such as roads, parade grounds and parking areas. Myers and co-workers have developed low cost bitumen and then adding a non-penetrating bitumen emulsion to seal the surface.[9] These catchments record 100 per cent runoff but unfor-

[8] Myers, Lloyd E. *Recent Advances in Water Harvesting.*
[9] Myers, Frasier & Griggs. *Sprayed Asphalt Pavements for Water Harvesting.*

tunately it is frequently discoloured by bitumen oxidation. Research is now being undertaken to prevent this oxidation which is tasteless, odourless and believed to be harmless to humans. The on-site cost of sprayed bitumen is about 75 cents per square yard.

Other successful materials are plastic and metal films, provided that they can be securely anchored to prevent damage by wind, runoff and other forces. Anchoring devices include steel spikes, smoothed boulders, car tyres or similar weights. Researchers in the USA have developed new techniques of bonding plastic or metal films to the soil using low-cost bitumen.[10] 1.5-mm black polyethylene film and 1-mm aluminium foil have been satisfactorily bonded this way. A bitumen-fibreglass catchment near Kukaiau, Hawaii, was installed for 85 cents per square yard and will last at least 10 years with minimal maintenance.



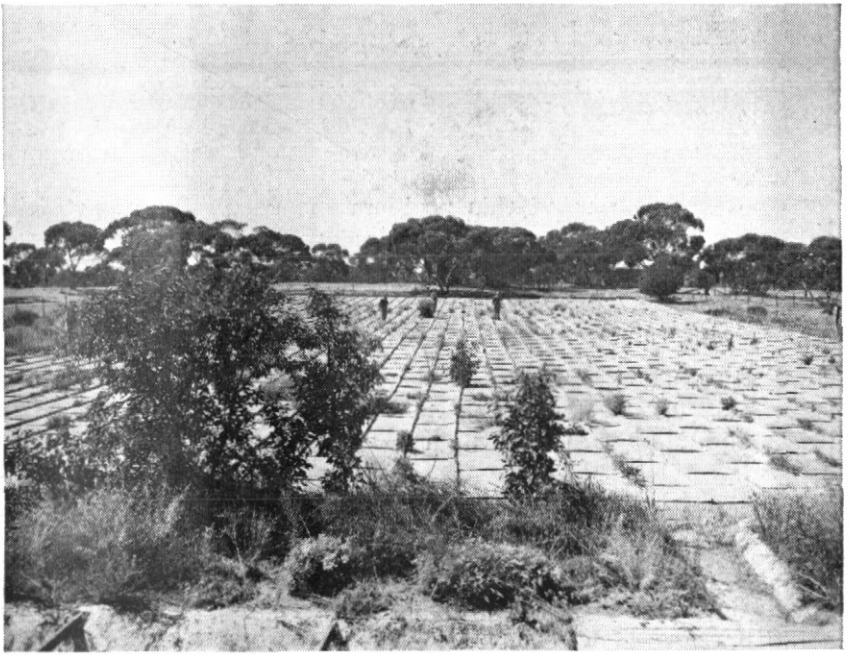
(US Water Conservation Laboratory, Phoenix, Arizona.)

A bitumen-fibreglass catchment near Kukaiau, Hawaii, in a 100-inch rainfall zone.

[10] Myers, Lloyd E. *Water Harvesting with Plastic Films.*

Butyl rubber sheeting has been used and proved highly resistant to both weathering and mechanical damage.[11] In Hawaii, about 30 small artificial catchments have been constructed with reinforced butyl sheeting over difficult ground consisting of small, sharp cinders. The main problem encountered was uplift of the sheeting by wind but this was solved by weighing down the sheeting and by avoiding sharp changes in slope. The cost of butyl rubber is about $2.00 per square yard.

Standard construction materials such as sheet metal and concrete have been used for several years for collecting rainfall. Pioneer work was carried out by a Victorian engineer, A. S. Kenyon, who built galvanised sheet iron catchments called 'iron-clad catchments' in the Mallee district of Victoria.[12] These catch-



(Victorian Water Commission)

Iron-clad catchment at Nowingi, Victoria, as it appeared in 1957, thirty years after installation. Re-growth can be seen between the cast-iron sheets.

[11] Lauritzen, C. W. *Collecting Desert Rainfall.*
[12] Kenyon, A. S. *The Ironclad or Artificial Catchment.*

ments have operated very successfully over many years. An iron-clad catchment built at Nowingi, Victoria, consisting of 6,400 square feet of cast iron sheeting and a storage of 20,000 gallons cost £245 in 1927. Whilst technically sound, these standard materials are very expensive hence the continuous research into lower cost materials and techniques.

The installation costs are given as a guide, but in common with most construction costs the unit cost of a catchment will decrease as the area of the catchment increases.

Now what are the military applications of artificial catchments? One is water supply in desert operations. Up to date, the main military sources have been wells and bore holes; however, as ME Vol VI states:

> Much of the underground desert water is highly saline. The only practicable method of removing the salinity of water is by distillation; but its potability may be improved by blending a high salinity water with water of a low salinity or with distilled water.
> Distillation is a very unsatisfactory way of providing drinking water on any but a comparatively small scale.
> The plant able to produce even 1,000 gallons per hour is so large and complicated that it is immobile, vulnerable to enemy action, difficult to maintain in the field and requires considerable quantities of fuel.[13]

Bearing in mind this problem the capability of artificial catchments to produce pure, salt-free water cannot be ignored, particularly since this source depends on rainfall and not streamflow and it is well known that in desert regions the rainfall is many times greater than stream flow.

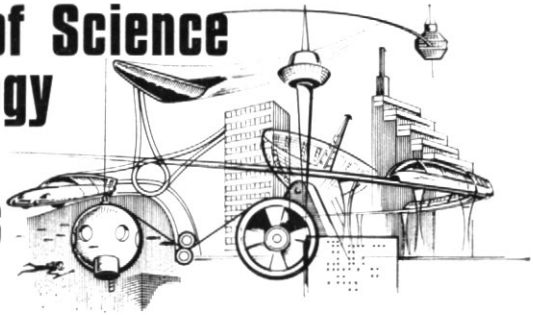
The advantages of artificial catchments as a means of supply during protracted defence has already been discussed in the introduction and requires no further comment.

Another possible use for these catchments would be as a supply for garrisons stationed overseas in highly populated districts with low hygiene standards and a high disease incidence. By siting an artificial catchment within or adjacent to the perimeter of the camp, a properly protected supply of pure water could be ensured.

Whilst it is not claimed that these catchments are a panacea, it is considered that under certain circumstances they could prove to be an important source of pure water for military installations. □

[13] ME Volume VI, *Water Supply & Petroleum Installation (1956).*

The Impact of Science and Technology on Society in the 1980s



Colonel J. O. Langtry, DCM
Australian Staff Corps

Introduction

IN the 1980s a number of technological impacts will converge and may produce major, perhaps radical, changes in society. Among the relevant factors can be mentioned the pervasive impact of computers; truly global mass communications; development of ocean resources; the multiple problems of advanced industrial societies; and the imponderable effects of bio-medicine and genetic engineering.

What will increasingly matter will be not so much the extent of the technological advance, but rather the far-sightedness in planning, determination in the pursuit of selected goals, and willingness to reshape and restructure the existing social institutions and technological superstructure to meet the requirements of future technology. The fact is that the over-riding problems arising from the impact of science and technology through the 1980s are not scientific or technical, but ethical and political. The concern must be to ensure that the sociological impact is kept within tolerable limits. If the advanced tech-

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Colonel Langtry saw service with the AIF in World War II in the SWPA and was commissioned in the field. Post-war he completed a B.Sc. degree at Melbourne University. He was accepted into the Australian Staff Corps in 1951. His basic calling is infantry and he served with 3 RAR in Korea and later raised and commanded 8 RAR in Australia and Malaysia. His appointments include Technical Staff Officer with the Australian Operational Research Group and Exchange Officer to the US Army in Washington DC. He attended the Australian Staff College in 1958, the US Command and General Staff College in 1963-64 and graduated from the Australian Services Staff College in 1970. He is currently serving in the Department of Defence.

nology nations are to do this, they must be well on their way by the 1980s to directing their vast resources to rehabilitating their physical environment and improving what has come to be called 'the quality of life'.

The soldier, sailor and airman will be no less affected in his daily life by the 'technological revolution' than his civilian counterpart. It is for this reason that I have put together this article; and in doing so I am conscious of the wide range of literature which I have drawn on for material. It is regretted that lack of space precludes attaching a full bibliography, and rather than quote from a selected few I have quoted from none at all.

Dynamics and Rate of Social Change

That technology of the future may bring both great benefits and serious perils to society has already become apparent in the developing countries no less than in the more developed societies of the world. The growing popular concern is how to control it and its impact; the alternative could be to be controlled by it. Control of technology requires analytical insight of the nature of its sociological impact, and a systematic effort by society to maximize its benefits and minimize its harmful effects in the context of social goals and purposes.

The total body of currently existing science and technology is so large and so versatile that a particular socially significant impact is unlikely to depend on progress in one area of technology alone. It may come from an advance or a breakthrough in one area or another, or it may come from a number of them at about the same time, in which case the impact is likely to be more revolutionary than evolutionary.

Technology, in a short space of time, has transformed agriculture from a predominantly labour intensive to a predominantly capital intensive activity in nation after nation. Today, in a dozen major countries, agriculture employs fewer than fifteen per cent of the economically active population. In the US, this figure is already below six per cent and is still shrinking rapidly. It is not at all unlikely that agricultural productivity in most

developed countries will grow even faster during the coming decades before it levels off. The one important exception to this might be the USSR, where ideological constraints or ineffectual economic management have inhibited the full application of technology to agriculture. As a result, the USSR, in 1913 one of the world's largest food exporters, now can barely feed her own population. Yet the USSR still keeps nearly half of her people on the land.

We are now undergoing the most extensive and rapid urbanization the world has ever seen. In 1850 only four cities had a population of one million or more. By 1900 the number had increased to nineteen. By 1960 there were 141. Today, world urban population is rocketing upward at a rate of about 6.5 per cent per year. Urbanization should be considered in the light of the probability that the next twenty years will add to the world's population about as many people as the whole history of mankind has done to date.

The same accelerative tendency is apparent in man's consumption of energy. It has been estimated that half of all the energy consumed by man in the past 2000 years has been consumed in the last 100. By the 1980s the demands for energy will have reached the point where conservation of some traditional sources of energy will probably be necessary in some countries and alternative sources will need to be developed, if a continuing balance between man and his natural resources is to be maintained.

Never in history has man been confronted with such affluence; mostly due to technological innovations. Although technology is not the only source of change in society — factors such as population growth, urbanization, shifting proportions of young and old all play a role — technology is indisputably a major force behind the accelerative thrust. The reason for this is that technology feeds on itself. Technology makes more technology possible. It has been estimated that ninety per cent of all the scientists who ever lived are now alive, and they are making new discoveries every day. These are put to work much more quickly than ever before, and the time between original concept and practical use has been radically reduced. Today, a vast and

growing research and development industry is consciously working to reduce the lag still further.

It has been argued in some quarters that there is a trend developing against the current pace of research. This is only partly true and possibly only for the Western powers. In the major Western powers there is a discernible trend away from fundamental scientific research in favour of product-oriented technological research and development. In the USSR the emphasis appears to be strongly on applied research and development, especially in engineering. Soviet emphasis is on catching up with the West — hence there is little likelihood of emphasis on fundamental research, except in selected areas. China's policy is similar to that of the USSR.

Although there is a trend in the developed countries towards spending more on biological and social sciences aimed at solving real or apparent social needs — not the least of which is the need to deal with pollution — the pace of technological innovation generally over the decade as a whole (after a slow start), is likely to quicken, and the associated accelerating pace and complexity of life will place increasing stress on man's adaptive capacity and hence all his behavioural processes.

Some people thrive on the new rapid pace, others are fiercely repelled by it and will attempt to retard the process; but the great majority are likely to continue to try to adapt, probably grumbling, but without really comprehending the true significance of the impact on their lives. For the 1980s, the accelerating pace and complexity of life appears to be irreversible in advanced societies. The underdeveloped countries on the other hand would appear to have options to control the pace, but only such as the developed countries choose to give them, and even these will be limited by the sheer size of their problems.

Sociological Response

The profound nature of sociological response to the emergence of 'techno-societies' — that is, societies in which technology is becoming the dominant factor in shaping culture — is illustrated by the ever widening volume of literature devoted

to the subject and the sudden proliferation of agencies and research institutes concerned with its definition.

It suffices here to note that all the techno-societies to a greater or lesser extent appear to have begun an upheaval in sociological response to the pace and range of technological response. It is too soon to say if and when identifiable new 'ethics for the technological age' will emerge or whether we should expect a period of prolonged moral uncertainty. While in the past a man growing up in a society could expect that its public value system would remain largely unchanged in his lifetime, no such assumption is warranted today in techno-societies. For the foreseeable future we must probably anticipate rapid value change in the Western oriented techno-societies, where there is mounting concern that the whole present framework of society, including its institutions of government, of law, and learning are inadequate to the changes. The Soviet Union is hardly likely to remain immune to these pressures and, although the likely situation in China is harder to gauge, the further China advances along the same path the more likely that similar stresses will arise. Nevertheless, however great the influence which may be attributed to technological change, we would grossly exaggerate its role if we were to believe that changes associated with it are caused by it alone and therefore can be foreseen from it alone. Even in the US, where technology has taken hold to a much greater extent than in any other country, it is the inter-action of technology with other more fundamental issues which has compounded the problems for American society to the point where today it is deeply troubled by uncertainty with respect to affluence, poverty, property, law and order, sex, race, religion, family and self.

As young students observe the rapidity of change they begin to wonder whether the skills they obtain through long years of schooling will be applicable to the society they will live in. As they try to look into the 'post-industrial' society of the coming years, with its emphasis on superior knowledge, meritocracy, and highly complex, even more impersonal, computerized decision making by increasingly larger organizations, many young people find the picture discouraging. Hence the trend amongst them

towards social and moral concerns and the humanitarian aspects of life, away from the highly rational, complex, impersonal realities induced by technological advance. The social consciousness in the community has largely risen from students and young people generally and is constantly being renewed by the changing student population. In science and technology especially, the differences that exist between those whose education was completed by the early 1950s and those whose education took place substantially in the late 1950s are not always recognized. The tremendous post-war upsurge in science produced major changes in basic thinking in almost every discipline around this time and the rate has accelerated ever since.

For a variety of reasons, all societies will not be equally successful in coping with the impact of technology. The price for failure, however, could be high: it may involve extensive social dislocation, widespread personal insecurity, severe social instability, and a serious weakening, and possibly collapse, of governmental authority and capability for defence.

Impact on Education

It is popular today to refer to the 'information explosion'. Of course the rate at which man has been storing up useful information has been spiraling upward. But it was the advent of the computer and more flexible and versatile communications in the 1950s which triggered the rate of knowledge acquisition to quite unpredicted, dumbfounding speeds, and the new generation of computers and communication techniques will greatly accelerate the process again.

Even today the most skilled and intelligent people admit difficulty in keeping up with the deluge of new knowledge — even in extremely narrow fields. There is an increasing need for specialists, and hence the greatest impact is likely to be in the field of education.

It has been assessed that, at the rate at which knowledge is growing, by the time the child born today graduates from college, the amount of knowledge in the world will be four times as great. By the time that same child is fifty years old, it will be thirty-two times as great, and 97 per cent of everything

known in the world will have been learned since the time he was born. Granting that definitions of 'knowledge' are vague and that such statistics are necessarily hazardous, there is little doubt that the rising tide of new knowledge will force increasing numbers into ever-narrower specialization (which in itself creates new problems of communication within society) and this will apply equally to military education.

In education, as in the production of material goods, advanced societies are shifting irresistibly away from, rather than towards, standardization. Although there is still need for imaginative, far-sighted and broadly educated executives, there is little evidence that the technology of tomorrow can be run without armies of highly trained specialists.

Techno-societies are demanding, and will continue to demand, more 'multi-specialists' (men who know one field deeply, but who can cross over into another as well) rather than rigid 'mono-specialists'.

Man looks increasingly to education to fit children for life in the future, and yet the patterns of education are more oriented to the past and the present than the future — particularly the future in techno-societies. The understanding now emerging, and which will probably find full expression in the 1980s, is one which recognizes that the new generation needs to be taught to make repeated, probabilistic, increasingly long range assumptions about the future. There is an ever increasing need to make projections about the kind of jobs, professions, vocations that may be needed twenty to fifty years in the future; assumptions about the kind of family forms and human relationships that will prevail; the kinds of ethical and moral problems that will arise; the kind of technology that will surround us and the organizational structures with which we must meet. There are signs that the revolution in education is beginning, but the need to develop real momentum in it is urgent.

Organizational Trends

Effective methods for preventing, or coping with, problems of co-ordination and communication in a changing tech-

nological society are likely to be found in new arrangements of people and tasks, in arrangements which sharply break with bureaucratic tradition.

It may be a long time before the systems of bureaucratic hierarchy, which today characterises both government and large scale industry, are replaced, because they are well suited to tasks that require masses of moderately educated men to perform routine operations and, no doubt, some such operations will continue to be performed by men in the future. Yet is is precisely such tasks that the computer and automated equipment do far better than men. Wherever organizations today are caught up in the stream of technological or social change, wherever research and development is important, wherever men must cope with first time problems, the decline of bureaucratic forms is most pronounced.

The extraordinary increase in the speed by which public announcements as well as news of economic and political factors are transmitted exerts a steady and sharp pressure in the direction of speeding up the tempo of administrative reaction. It is already clear that the acceleration of change has reached so rapid a pace that present models of bureaucracy are failing to keep up. Information ranges through society so rapidly, drastic changes in technology come so quickly, that newer, more responsive forms of organization must characterize the future.

The current trend, which is likely to carry forward into the 1980s, is symbolized by the rapid rise of 'project' or 'task-force' management. Here teams are assembled to solve specific short-term problems. Both in the US and elsewhere the trend is from vertical to lateral communication systems. The intended result is speedier communications, and as the vertical chain of command is increasingly by-passed, managers are tending to lose their monopoly on decision making. The trend is gaining added momentum from the advent of specialists in vital fields so narrow that often the men on top have difficulty understanding them.

Almost daily the management of society is becoming more complex. Management of computer systems, educational technology, the applications of systems-techniques to urban prob-

lems, the developing oceanography industry, agencies concerned with environmental health, all more representative of the future than the past, is demanding organizational techniques in total contrast to the security-minded, orthodoxy and conformity associated with present day bureaucracy.

But perhaps the major determinant of the change will stem from a demonstrable inadequacy of administrations as they exist today to cope with the government of the populations forecast for tomorrow. Questions arise such as: Can a single central government in China manage the population of close to the 1100-million forecast for the 1980s? Will the gigantic cities of the 1980s become autonomous entities? Is there likely to be a breakdown in the nation-state concept? Whatever the answers may be, it is certain that the strains imposed will absorb more human endeavour and resources than ever before. Nations afflicted in this way are likely to be more inward than outward looking.

Because of the mounting inhibitions on resort to open conflict, non-military technology is gaining in importance in areas of direct relevance to national security, mainly because its potential for changing the distribution of world and regional influence is growing faster than the role of military technology. There are many examples, and only a few are mentioned below. Some are innovations, some are merely traditional techniques made more effective by new technologies. The advantage, in each case, lies with the nation best able to afford the costs of technological developments and having the imagination and the entrepreneurial skills to exploit them on the grand scale:

- Computers, global communications and high speed transportation will make it increasingly practicable to control a scattered international enterprise from a single location, thus enhancing the role of foreign investment in extending a nation's influence.
- Technological developments are likely to reduce the cost of power dramatically by the end of the century, and developed countries that succeed in this would gain important advantages in world markets and leverages of influence in less developed countries.

- Earth-resources evaluation satellites, used with advanced computers, have the potential for an increasingly wide range of surveillance capability. This will enhance the power of nations that can afford them, but the consequences for national security are hard to predict, even if a world consensus of nations concerned for their national security would tend to prevent unlicensed satellite surveillance of this kind.
- Technological capability for the exploitation of the ocean resources at depth will give an opportunity for the acquisition and projection of national power; but there are serious geographical implications.

It is the speed of modern developments that accentuates the importance of non-military technology to national security. Once again it is the developing countries that will be at a disadvantage because they will be hard put to afford the escalating costs of technology.

Conversely, the impact of technology on a society and the resultant social strains may have adverse implications for the projection of national influence — in this the US could be the first contender should its society fail to cope with the technological age.

International Collaboration

Many aspects of science and technology have for a long time been the subject of close collaboration among developed nations. The trend is accelerating because of the costliness of scientific and technological research and development, and the massiveness and cost of instrumentation, requiring an order of advanced skill in design and construction which today exceed the practical capacities of any but the super-powers, and which in the future may approach the limits even of their resources. Although there have been setbacks, it is quite likely that by the 1980s the number of scientific fields in which there is intimate international collaboration among advanced nations will have greatly widened due to practical and economic necessity, and this evolution may considerably affect the relationships of states

throughout a large part of the Western world in significant ways not easy to project precisely today.

The coming decades will also witness the continuing and possibly dramatic evolution of another powerful force for international and technical collaboration, one that could bring about an actual melding of scientific and technical resources among a number of developed nations — the further growth and proliferation of the great multi-national corporations.

Three regions of the world stand today somewhat apart from the drive towards global technological integration: the areas of underdevelopment; those that are still only lightly populated such as the Amazon and the Antarctic; and the ocean floor. It is worth noting that already the Amazon is under renewed pressure for development, and that technology is beginning to be applied to the total oceanic environment in new ways. The pressures on the less developed countries towards technological absorption are likely to be greatly intensified over the next years.

Avenues for Technological Development

There are three levels at which a nation may respond to the challenge of the 'techno-society' age:

(1) It can support scientific investigation and technical development across what amounts to a universal front, seeking to maintain its position in all the advanced fields open to it.

(2) If its resources of talent and money are modest it can try to specialize, concentrating on limited areas of science and technology which it considers of the greatest strategic value.

(3) It can achieve its initial access to science and technology by importations from abroad, hoping later to model its own research and development on them.

The first course is possible obviously in any extended sense only for the super-powers, and it has been followed by both the US and USSR. However both are now finding it necessary to become increasingly more selective. Britain and France

both tried to follow this path in the 1950s and 1960s but were forced to abandon it during the last decade.

Switzerland, Sweden and the Netherlands, among others, have consistently followed the second option.

The third policy is full of risks. Japan has demonstrated that, in the right circumstances and rightly approached, it can be eminently successful, leading to burgeoning independent scientific, technological and economic strength. But there is a thin line between success and failure for a smaller, less experienced country relying on this strategy. The potential for indigenous scientific and technological growth — and with it for an appropriate system of education — must be present or must be created and developed in parallel with the borrowing if the enterprise is to be viable over the long term. This is the problem besetting so many developing nations.

Science and Technology in Developing Countries

The explosive spread of modern technologies to many developing countries can prove a two-edged sword in their political growth and modernization. Too often the technologies which are preferred, and which tend to be accepted, can be seriously incompatible with the cultures to which they are transplanted, unless they are modified to take this factor into account. Even the advent of the 'green revolution' has the potential to perpetuate and possibly exacerbate existing inequities.

Nevertheless, without the advantages of science and technology the developing countries are bound to stagnate economically. Even with it, what economic progress occurs will not be sufficient to bring about a closing of the technological 'gap' by 1990.

One of the most effective kinds of aid would be to assist these countries in gradually developing and maintaining a reasonable autonomy in scientific and technological growth, at the same time retaining a proper balance between indigenous science and transplanted technology, and recognizing the necessity to ensure that scientific and technological development must be relevant to their actual problems.

Coupled with aid in science and technology is the need for assistance in developing appropriate indigenous industries. Without them, overcrowded cities are powerless to provide for the masses flocking into them from the agricultural scene. (The growth of a rootless unemployed population in every city of any size in most South-East Asian countries has already shown the scale and urgency of this problem). Without them, effective indigenous technologies have no chance of evolving and establishing firm roots. Moreover, without an established industrial structure, science itself will lack an essential element of the tripartite support on which it must rest in any country; the tripod of an educational system, of industry, and of government.

It is in the establishing of the necessary indigenous industries that the rise of multi-national corporations in the next few decades offers some hope, although official development aid will still be more important. The main deterrent to multi-national ventures is the risk of political instability found in so many developing countries.

Finally, it is as clear as it possibly could be that a critical element in the salvation of the new countries, in the fields of science and technology as elsewhere, must lie in the successful growth and the effective functioning of their educational systems as well as their subject content, their underlying philosophy and their balance. For developing countries with excessive and fast growing populations, and little prospect of limiting it during the period, the educational problems would appear to be almost insurmountable. However, China seems to be coping with the problem by limiting the numbers to be educated to an advanced, *elite* level.

Whatever policies may be adopted, the application of modern science and technology to developing nations can have only limited beneficial effects which will do little to close the gap between them and those nations now entering the 'techno-society' or 'super-industrial' stage. It is foreseen that this situation will persist throughout the 1980s.

The fact that all the world's rich nations, excepting only the Japanese, are white, and all the world's poor nations, excluding only part of Latin America, are coloured is likely to

exacerbate the problem of fostering patience within the developing countries and tolerance towards those developed countries who may try to assist them.

Summary

A key political task in the coming decades for all nations will be the creation of machinery to exert systematic social control over technology. At present, most democracies are ill-prepared for such a task because their societies are disinclined to look far beyond the satisfaction of their short term wants, and their politicians tend to focus their eyes more on the next elections than on the long term future. If democratic forms of government are to survive the technological revolution they will need to be strengthened by an informed and enduring sense of responsibility for the future in every individual from the top to the bottom of their decision making structures. This is not a reform that can safely await the 1980s. However it is one which will be easier and less costly for those countries not already severely afflicted by the consequences of the technological impact.

The outlook for totalitarian states is more obscure, but they too will face severe problems. □

MONTHLY AWARDS

The Board of Review has awarded prizes for the best original articles published in the November and December 1971 issues of the journal to:

November: Lieutenant Colonel A. Argent ('Quinn of Quinn's Post') $10.

December: Major J. H. Moore ('Japanese Command Crisis in Burma, 1944') $10.

In Search of Ali

Lieutenant Colonel C. F. Thomson,
Royal Australian Infantry

The highlights of a journey to the Northern Frontier Province of Kenya in explanation of the circumstances whereby some damage was incurred to HM property.

COMMAND HEADQUARTERS,
NAIROBI,
KENYA.

From: 2/Lt C. F. Thomson,
The King's African Rifles,
Embu,
Kenya.
31st May, 1953.

Dear Sir,

DEBIT VOUCHER: Shs 420/-.

On the First of May 1953, at about sixteen hundred hours, I was called to attend upon my commanding officer in our encampment here in Embu. It appeared from a usually reliable source that the colonel was not of a benign disposition at the time, and I lost no time in responding to the summons. Upon entering his tent I was greeted with the following dialogue; or as near as I can recall it.

'Wadayamean they've gone on leave . . . !' Small flecks of expostulation arced onto his desk as he continued, '. . . who sent 'em on leave? Get 'em back!'

You will appreciate that I was, as yet, a little unclear as to the exact subject at issue but I was able, in spite of a rising indignation, to conduct myself in a restrained and officer-like manner, and I replied, 'yessir', while withdrawing smartly into the evening sun. I had assessed, correctly I hope, that any display of ignorance as to my implied offence would merely have provoked a more serious tirade. Since it was necessary therefore to consult with someone who might clarify the matter in an objective, logical way, I went to see the adjutant.

'Ahhh, yes,' he explained, 'it's those Somalis — five of 'em. They're all witnesses for the court martial to be held week after next. You see, someone sent 'em on leave by mistake, and *you* have been selected to bring 'em back.' There was a long pause as he pushed a scrap of paper towards me. I read the names of three Alis and two Mohammeds.

'You've got twelve days — no, make that eleven,' he went on, 'the Court's been specially flown from the UK for the occasion and they're all generals or brigadiers. Can't disappoint a group like that, can we.' He twisted to face the map which was hanging to one side. 'Now, you'll find them somewhere between here —' he said, pointing to Cape Town, '— and here.' His cane briskly traced the Mediterranean. 'Now off you go young chap — and don't be late will you.' I was turning to leave when he added, encouragingly:

'Oh, by the way, there's a school of thought which subscribes to one of Darwin's theories; namely, that a second lieutenant is the lowest form of animal life. On the other hand

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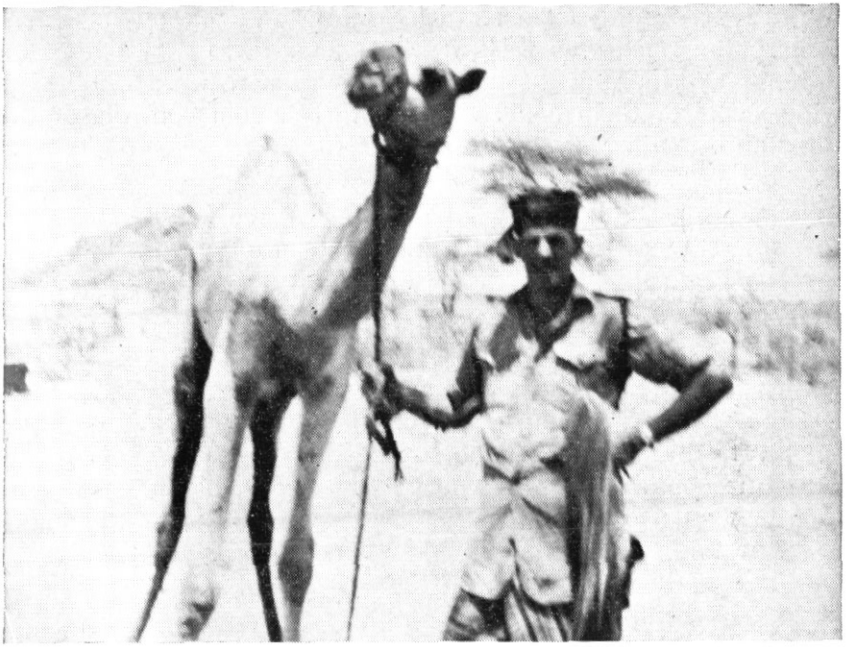
Lieutenant Colonel Thomson was born in South America and educated in Kenya and UK. He joined the British Army in 1950 and was a dispatch rider with the Royal Artillery before commissioning, in 1951, into The Highland Light Infantry. He then served with the King's African Rifles in Kenya. In 1955 he was granted a regular commission in the 10th Gurkha Rifles and served in Malaya, Hong Kong, Borneo and Sarawak. In 1968 he was appointed to a short service commission with ARA. Colonel Thomson served with 7 RAR in Australia and Vietnam until posted to AHQ Canberra in April 1971. He is currently a GSO1 with the Directorate of Military Training.



Author and friend.

there's another group which will seek to prove otherwise if you're late.' He smiled cruelly and waved a dismissal. I went outside to take a long, hopeless look in a northerly direction.

'Sergeant Musyoka!' I shouted, pulling myself together, 'I want three Somalis, a lorry and supplies for fourteen days — make that ten days.' A massive NCO standing near the cookhouse looked up and said something like, 'eh?' with his mouth full of posho. '— in thirty minutes!' I added meaningly.

Sergeant Musyoka resumed his chomping but looked sadly at his full plate as he slid it wearily onto the table.

We left Embu at about six o'clock that evening, and bumping our way westwards from Mount Kenya, we made for the main trunk route that led north to Nanyuki, Isiolo and the Mediterranean. In the back of the vehicle were two drums; one of petrol and one of water; three Somalis and various sacks contain-

ing rations. On my right and every now and again paying attention to the road, was Kassim Mohammed. He was a little on the spindly side, but his boots were special thirteens, and very wide. One of them could span all three pedal controls of the lorry and then leave some to spare. He had learned to live with this defect, and he was able, somehow, to operate each pedal independently most of the time. In emergency, of course, all three were depressed willy nilly.

We reached the barrier at Isiolo, the gateway to Kenya's Northern Frontier Province, at about five o'clock the next morning. Here I was required to report to the District Commissioner, and to provide him with the details of our proposed journey. The DC had to satisfy himself that our purpose was not to agitate the Shifta; marauders operating from sanctuary across the border. This one could do in two ways. One could indulge their ambitions with a consignment of small arms, or one could incite them into a foray with a childlike display of vulnerability.

'*Tafadhali effendi,*' Kassim's falsetto voice called to me as I walked towards the DC's office. I turned to see him standing by the lorry, his heels together and his toes at a hundred and eighty degrees. '— *Tafadhali, effendi, tafadhali nipe rukhsa kukutana na mama yango.*' I stared blankly at him for a moment while I pondered his centre of gravity. I judged it to be some three feet below the ground.

'Yes — yes of course you may visit your mother. By all means, but be back here in half an hour,' I cautioned. He made off towards the cluster of tin shacks as I turned to enter the DC's office.

Inside, the office was cool and spacious. The DC looked up as I introduced myself and stated my business. My confidence deteriorated sadly when he finished a silent scrutiny of my person with:

'Mmmmm — yerse,' and with a shudder he reached across his desk and spread a telegram before him. 'Yerse —' he repeated, 'I have a cable here which says that a potential protoplasm will be arriving shortly to seek out some leave men — they're all listed here.' He looked up at me again. 'I've got the

message about the men but what's all this about a protoplasm? — what's a protoplasm? Did you bring a protoplasm with you?'

'Sorry sir,' I replied, 'I simply have no idea what he's talking about. My orders were specifically to — wait a minute —' The words *Animal Life; Lowest Form Of*, began to shape in my mind. 'Oh, I shouldn't worry about that sir,' I went on, 'it's just a humorous reference to what my rank will be if I fail in this mission. Poor taste, sir, poor taste. Please just ignore it.'

'I see,' he said doubtfully, 'well, anyway, two of the men listed here came through a while ago. I've already sent a couple of policemen to bring them in. You c'n pick 'em up on your way back. Okay?'

'Sah,' I replied; the visions of a military protoplasm rapidly fading.

'But you'll be hard pressed to find the others, I imagine.' A picture of a jellyfish shot into focus as the DC spoke again. 'You realize that these men you're looking for are all Somali nomads, do you? They could be anywhere by now.' The jellyfish was edged out by a revolting piece of fungus.

'Sir,' I nodded dejectedly.

'Righto then, I don't think there's anything else. Just take care on your way up to Wajir, though, the sand drifts can make a nonsense of your itinerary.'

'Thank you sir,' I said; formally and without any sincerity, 'I'll be off then.' I saluted smartly and received the Redskin 'How' sign in acknowledgement.

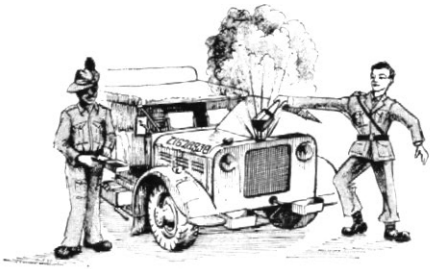
'How was your mother?' I shouted to Kassim as we drove northwards through the dry, stony, scrub covered plains towards Wajir; the district in which I hoped to find another of the witnesses.

'Well, *effendi*, well,' he screeched as he wrenched the vehicle from side to side to avoid the worst of the larval rocks over which we were passing.

'You may be able to see her again when we return,' I shouted again.

'Thank you *effendi*,' he called between wrestles, 'may all your sons be *Mullahs*.' I made a mental note to find out what a *Mullah* was.

The road to Wajir wound a most irregular course among the stunted acacias. After the volcanic debris which had so rattled our systems, the softer, sandy section was a welcome change. But the DC had been right. At this time of the year there was so much drifting of sand that the few lorries using the route often chose detours in order to avoid the worst. To us this meant a continuous series of decisions; most of which were either late or wrong. It also meant very slow progress in low gear, and although the overheated engine dissipated a considerable number of degrees centigrade through the soles of my feet, it was not enough to prevent frequent and unscheduled stops. On these occasions we rebuked ourselves; that is to say, I rebuked my subordinates for not having brought a larger container with which to water the truck. As it was we had to syphon water from the forty-four gallon drum into a mess tin, and then carry it round to the radiator. The paltry amounts we were able to pour into it each time were hotly and ungratefully vomited over us.



There was seldom anyone to be seen along the road. From time to time we passed a file of arrogant camels led by a Somali, and perhaps we saw two or three lorries halted by the track; their drivers asleep beneath them during the fierce heat of the day. In all respects it seemed solitary, thrilling desolation — unless our speed fell below fifteen miles per hour. Our whining, complaining approach at these times could be heard some distance away, and the tribesmen had ample time to gather their gourds and intercept us from wherever they were encamped. Wisely, they often sent their small children whose round, appealing eyes played havoc with our determined indifference — and that is how we finished our water supply with ninety miles yet

to travel. The supply would have been exhausted sooner but for an occasional burst of speed. Then the would-be interceptors were made uncomfortably aware of their inferior tactics by the monstrous, billowing dust of our wake.

It was soon after the water drum registered zero that I began to consider a prolonged cooling off halt — but element of choice was denied me after a few minutes because the truck stopped anyway; its engine seized fast. It was not until late that night that we were able to move again, and by this time I was cold on the outside, still hot on the inside and my tongue was the size of Kassim's boot.

I took to Wajir the moment I saw it in the light of a three-quarter moon at four o'clock in the morning. Even at the age of twenty-one I was agreeably impressed by the sight of a glinting shanty town huddled about its white-walled fort. Everywhere about us there was a dull clunk of camel bells. The acoustic cocktail of night noises was made only slightly less romantic by the occasional belch from forward, the digestive gurgle from amidships and the slap of droppings from aft; the busy sounds of many a desert ship in port.

A shuffle in the ramparts high above us drew our attention to the silhouette of a tribal legionaire. His rifle seemed to be pointing in our direction, and I thought I heard him call, 'haloogodere!'

'Hi there — boss in?' I shouted back affably. A short guttural exchange followed between the sentry and Kassim, and we were allowed to proceed. I learned later that night-comers were usually given what is known as 'short shifta'. This procedure comprised of a warning shot across the bows which was the order to heave to, then a shot aimed to kill was fired some two seconds later — or more precisely, when the target had complied with the order to heave to and therefore presented a more suitable target. I should point out in all fairness to the sentry that our appearance must have given him some misgivings. We were, in fact, very weary after our ten mile walk; from where our lorry had made its final, flatulent noise and my dusty, dishevelled appearance in no way indicated that I was an officer of the crown.

Since second lieutenants do not rouse District Commissioners at four in the morning, I began to examine the possibilities of raising a recovery team for our wretched vehicle. I asked Kassim.

'*Effendi,*' he squeaked confidently, 'thou may leave it all to thy devoted son. Come now and rest awhile at my father's house.'

'But Kassim,' I protested, 'the truck — what about the truck?' Do you realize that this so-called devoted *effendi* will lose his most desirable head if he fails in this mission?'

'O large one,' he persisted ingratiatingly, 'I will arrange all. Meanwhile you must sleep. Come now, O Sire, my father will welcome us.'

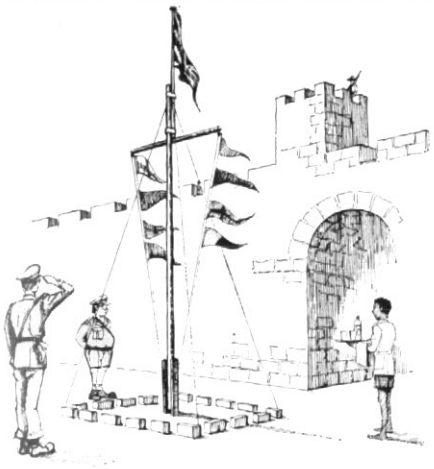
And so we repaired to the house of Mohammed Bin Ali, a venerable, kindly gentleman who insisted that I should sleep on his own couch while he lay his wrinkled old frame on a mat by the door. I was greatly honoured and not a little embarrassed by this chivalrous code of ethics. I had another lesson in local ethics too — when a woman in purdah was pointed out as Kassim's mother.

'B...but I thought you —,' I began incredulously.

'The lorry will be ready shortly!' shouted Kassim loudly. 'I will take a good mechanic, some water and two camels.' So saying he departed hurriedly lest O wise second lieutenant should persist in his naive social blundering.

I awoke about four hours later to find myself much refreshed and our truck purring contentedly outside. I was so relieved by this turn of fortune that I gave the mechanic twenty shillings; twice the amount he asked. To Kassim I gave a ten-shilling note together with a fatherly, 'run along and buy yourself a beer, lad.' This provoked a ten-minute recitation from the Koran; from which I gathered that alcoholic drink was forbidden to Muslims.

The DC disclosed some very pertinent information after our mutual introductions. First, that he had known me when I was so high; secondly, that one of the men I wanted was in the next room, having been located by a tribal patrol on the



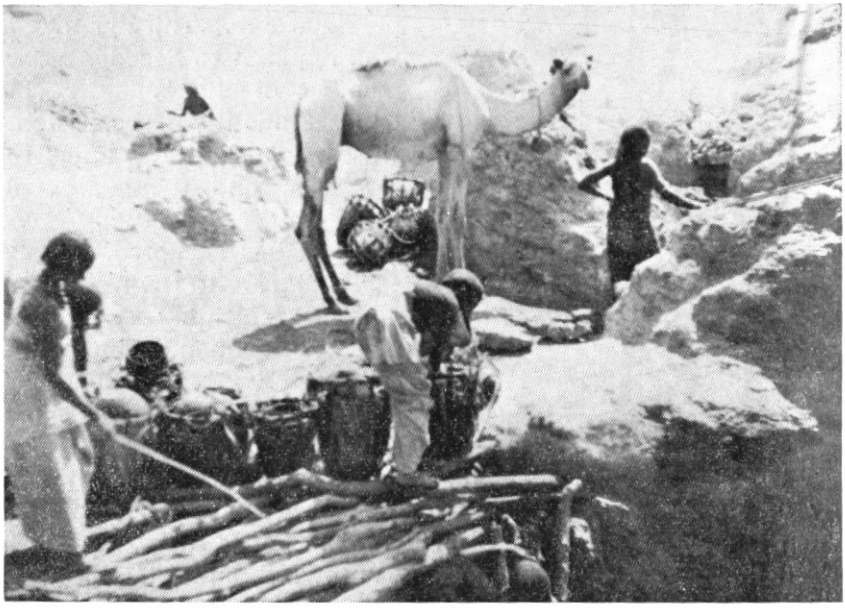
previous day. Thirdly, that I was required to become a life member of the Wajir Yacht Club. Since the nearest yacht was several hundred miles to the east, and there seemed little danger of actually having to sail, I accepted. I was taken outside to the masthead where I solemnly saluted a mass of pennants; including the small pox quarantine pennant. Part two of the ceremony required that I quaff a very large peg of neat gin. The DC drank a like measure without any ill effects, and I was much encouraged by his example. When I finally put my glass on the table I was pleasantly surprised that I was suffering nothing untoward, and I even found myself concentrating with hard bitten, adult maturity when the DC reverted to the more serious business of Ali Segat.

Ali, it appeared, was nowhere to be found. He had been traced to a point about seventy miles to the east, where his camel train had wandered in search of fodder. After that the trail had vanished — and there was no other nomad settlement to provide any clues either.

'I can't spare any of my policemen for a prolonged search', explained the DC, 'so it looks as if you'll have to find him yourself — or cut your losses,' he went on, 'but there's one good piece of news,' he added as an afterthought, 'Moyali have reported that they're sending the two men they've found. They'll be here the day after tomorrow.'

This was indeed good news; four out of five witnesses had been found, and that left only Ali Segat. What was it the DC had said? '. . . or cut your losses.' I had the feeling that losses would not be the only thing to be cut if I failed to bring back Ali. He was the master witness, and I just had to find him.

We left Wajir that same evening, and set course northwards along the Moyali track. Somewhere along it we were to



Well-of-the-Eight-Maidens-Deep

turn east, and I only hoped that the turning point was as well defined as the DC had said it would be.

The well, when we came to it, was indeed well defined; not so much visually definable but very audibly so. A muted wailing issued from its mouth. At the entrance to this vertical cavern stood a Somali girl. She was bare down to the waist, and she was chanting to the rhythm of her endless stooping as she scooped water from a recess in the wall. She used a gourd and poured its paltry contents into a miniature aqueduct hewn from the rock. This led to a large pit which must have been excavated at some considerable cost in effort. Around the pit were clustered the goats and camels of this particular tribal group. Below the girl at the well's entrance there was another — and below her, yet another. I was informed that all together there were eight girls toiling deep down in the well; each scooping gourdsful of water into the stepped recess above her.

A man of scruple might have hesitated to ask for water after seeing the lengths these people had to go for so little. But

Kassim was equal to the occasion. He distributed cigarettes — my cigarettes, and our containers were cheerfully filled. As we prepared to move Kassim reluctantly ceded the wheel to me and we drove on; eastwards now. This seemed to take Kassim by surprise for he began to protest vigorously.

'*Effendi*, this is not the way to Moyali. I thought we were going to Moyali — I bear gifts for my mother!'

'We're not going to Moyali,' I shouted back, 'there's no need. We have to look this way for Ali Segat. Anyway, you can't really have any more mothers; you've met up with two already,' I concluded.

We had not travelled more than a few miles when the track opened out into a maze of optional alternatives that we had encountered *en route* to Wajir. After five minutes of this I was dizzy from decision making, and I failed to choose between two equally bad ways of rounding a plump acacia tree. The gnarled truck fitted snugly into the radiator and being unable to disturb the union we were forced to look about for help. I sent two men back to the main Moyali road where they were to make arrangements (not specified) to travel to Wajir; there to deliver the glad tidings to the DC. I impressed upon them that whatever happened we must have the lorry repaired and in running order again within two days. Alternatively they were to throw us all at the mercy of the DC and ask him to provide us with something better than a camel. The RV was to be the Well-of-the-Eight-Maidens-Deep in two days. Kassim and I looked about for animal transport.

Late in the afternoon the dull sound of camel bells gave us hope at a time when my spirits were very low. But it was one thing to hear hollow wooden clunks and quite another to find the herdsman or owner. The camels seemed to be dispersed over miles of desert and if there was a herdsman he was indolent and

deserved to be disembowelled by the Shifta — so opined our Kassim. After some time a man stepped out from behind a bush with a cry that sounded like 'Scobar!' Kassim's guttural reply was followed by a brief exchange of words during which I heard 'cigarettes' mentioned several times. The upshot of the deal was that I was to be deprived of all but five cigarettes in exchange for two camels; plus another twenty for every day over the agreed two days.

We lost no time in mounting our camels, but a great deal of time was spent in setting them into reluctant motion. As I was to declare authoritatively to my friends, 'it's not so easy as you think — riding one of those camels.' Kassim, having presumably obtained an intelligence brief, led the way.

We travelled most of the night; stopping once at a village which I didn't see until we were in front of the headman's house. The huts were made by joining a number of fibre-made mats together and stretching them over a wooden frame. The result was something between a wigwam and an igloo. Even at this late hour we were well entertained. Food and drink were provided, and this proved to be both a first and last experience of the nomad diet. I was able to eat only a few pieces of half-cooked meat preserved in camel fat, and it was small comfort to know that it was *Hallal;* butchered in accordance with Muslim law. The camel milk I drank from sheer necessity, and my palate was irreparably damaged by the ceremonial coffee which was served during the discussions that followed. I gathered from our host that Ali Segat's people were very much on the move, but that they had been sighted earlier in the day. Since pasture was relatively good, we were informed, it was just possible that they would remain at one site for longer than the usual period of a single day. By this time I was past caring. Fatigue and nausea seemed to take hold simultaneously, and it was fortunate that I was just too tired to do anything about the latter. I was easily prevailed upon to sleep a while, therefore, and we continued on our way a short two hours later; feeling very much the worse for our short rest.

Dawn saw us lolling in our saddles. We had been on the move for several hours without meeting a soul, and it looked

very much as if our man's camp had moved again. Camel tracks were numerous, and our own beasts seemed well able to follow them without any guidance. When it was light enough I tried to search the horizon with my binoculars but was almost instantly overcome with travel sickness. Instead, and to keep myself awake, I called out at regular intervals, 'AAAAli, ahoy there Ali Segat.' I was thus able to reinforce Kassim's mounting suspicions regarding O wise subaltern's sanity. When eventually I opened my mouth and was unable to utter anything I called a halt, and we dismounted for a welcome rest.

I awoke with a start to find a slim stranger, his hair dyed red after the custom, standing over me. I shot to my feet in alarm, and looked wildly around for Kassim. He was nowhere to be seen so I addressed myself to the red-haired stranger, hoping that my Kiswahili would not entirely defeat him.

'Hail, O Warrior,' I blurted out with forced confidence, 'know thou one Ali Bin Segat, who is one of His Majesty's warriors?'

'I know him. What needs thou with him?' he replied suspiciously.

'Oh, nought of consequence.' I shrugged casually. 'He is required to speak to some Great Ones concerning matters of which he has knowledge.'

'Indeed.' He seemed unconvinced.

'Yes indeed,' I echoed. I was relieved to see Kassim emerge from the scrub at a run, and stop short with an exclamation of surprise. He advanced purposefully again and smilingly gripped the stranger's hand in a brief greeting. There followed such guttural talk of which I could understand very little. It seemed, from various gestures and covert looks in my direction, that reference was being made to some vehicle or other, and how it came to be against an example of stubborn flora.

'Well, what does he say?, does he know where Ali Segat is?' I interrupted impatiently. They were both silent for a moment, and then Kassim spoke with a hint of disappointment.

'*Effendi,* this *is* Ali. Do'st thou not know him?' It was my turn to be inarticulate; half joyful and half chagrined. I made much of shielding my eyes from the sun and grasping the stranger by the shoulders I spun him round to face into the light, where, as a good Muslim, he should have been facing anyway at this hour of the morning.

'Ali, — by jove! How are you, Ali?' I cried, finding my voice again.

'I am well *effendi.* I will go now to take the news to my people. You must come too *effendi,* then together we will return to Nairobi.' He turned on his heel and strode into the bush. We followed on our grunting, complaining beasts.

In the village I was questioned politely but insistently about the need for Ali to go to Nairobi. My replies had to be reassuring and non-committal. I felt that any motion of no confidence could result in a certain second lieutenant's swift demise. Ali's people were a competent looking group, and they appeared to hold the Shifta in contempt, judging by their presence in this vulnerable place. My diplomacy triumphed for the first time, and we were able to take our leave with a cheery goodwill. It seemed only right that I should now lead the train since the expedition had been so completely successful under my leadership. I was forced to surrender the status of leader when Kassim loped ahead of me and brought my mount to a halt. He looked me squarely in the eyes and pointed in the direction from which we had just come.

'Lead on MacNamara,' I mumbled, misquoting with uncertainty. 'I just wanted to see if you could spot the deliberate mistake,' I finished lamely. We solemnly retraced our steps.

There was both surprise and amusement when we came into Ali's village again, and plodded through to the other side. The rest of the journey to the RV was made in silence and without event. What is more, the vehicle was there; a little battered perhaps, but in running order. Although the happiness of good fortune urged me to foolhardiness, I managed to control myself and allow the tireless Kassim to take the wheel.

The return journey to Nairobi was completely without incident, and our lorry performed impeccably. We called in at Embu on the way to collect some clean uniforms, and we arrived in Nairobi at eight o'clock in the morning, two days after leaving the RV at the well. We found the court assembling for business. I had lost a day somewhere.

The foregoing is my condensed account of the happenings which led to the expenditure of Shs 420/- to which you have referred. I am confident, sir, that you will now reconsider the instruction contained in your letter, and that you will generously reassess the charge as a fair one against the public.

I remain, sir, your most obedient servant,

C. F. THOMSON, 2/Lt □

Again, as at Rabaul and Ambon, the Japanese invasion of Timor had been supported by the Japanese Carrier Fleet. It was this fleet which, at dawn on the 19th February, had launched 81 aircraft at Darwin to neutralise that base in preparation for the coming operations in the Indies. These 81 were joined by 54 land-based aircraft from Kendari; and at midday a second attack was made, by the land-based aircraft. At Darwin or near it the raiders sank the American destroyer *Peary*, four American transports, a British tanker, two large Australian ships and two small ones, killed 238 people and destroyed 10 aircraft.

— Lionel Wigmore, *The Japanese Thrust*

'REDLEGS' & INDIANS

Fort Sill, the Home of the U.S. Artillery

Captain P. S. Sadler
Royal Australian Artillery

WALKING through the Wichita Mountains in south-west Oklahoma, avoiding grazing buffalo, watching herds of deer bound across the grass and looking out for places where rattlesnakes like to hide, one can easily visualize groups of Red Indians quietly picking their way through the trees and over the rocks. For this was one of the last pieces of land the Indians could call their own, before, at best, they were shunted off to a reservation, or at worst, to die as the white man's advance submerged them. The Indian Territory, or what was to become the State of Oklahoma, became a final haven for Indians driven from other parts of their land. Here the Wichitas, Comanches and Kiowas settled, to hunt buffalo, to fight each other, and to wait for the inevitable final confrontation with the white man.

The 'Old West' Days

The first white men to see the Wichita Mountains were Spanish soldiers in 1541. Soon afterwards French explorers passed through the region, while there are accounts of French

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Captain Sadler enlisted in the ARA in 1959 and served as a topographical surveyor in the Royal Australian Survey Corps. He graduated from OCS in 1964 and was commissioned in RAA. Regimental appointments included service in Vietnam with Det 131 Div Loc Bty as survey officer in 1966-67. On his return he was posted to the P and E Establishment at Port Wakefield as Assistant Proof Officer until August 1969 when he became adjutant of 8 Medium Regiment. In October 1970 he attended the US Army Field Artillery School, Fort Sill, Oklahoma as a student in the Field Artillery Officers' Advance Course. This was followed by short attachments with artillery units at Fort Bragg, North Carolina. From November 1971 he has been an Instructor of Gunnery at the School of Artillery.

and American trading posts having survived there for a few years in the 1830s and 1840s.

Between 1770 and 1850 a group of Wichita Indians lived on a plateau near the Wichita Mountains. This plateau overlooks a watercourse, earlier named Cache Creek by a party of French explorers. The Wichita's camp was visited by the first party of US Army soldiers ever to enter the area, in July of 1834. This party, commanded by Colonel Henry Dodge, included a Lieutenant Jefferson Davis, who was later to become the US Secretary of War and in 1861 was elected President of the Confederacy at the start of the American Civil War.

Colonel Dodge led his party away and the army didn't visit the area again until 1852, when a Captain Marcy led a scientific expedition into the mountains from Texas. He found the remains of the recently deserted Wichita village and reported that the plateau would be a suitable site for the building of a military post, if the need for one arose.

Before that need came about, in 1859 an Indian Agency was established at Anadarko, some thirty miles to the north. The agency had barely begun to operate before the Civil War started in 1861, and it was occupied by Confederate troops. But these troops, together with white settlers there, were soon driven away by the Indians during one of the many Indian wars, in which Indians fought both each other and the white man.

In 1868, three years after the end of the Civil War, Major General Philip Sheridan, commanding the Department of the Missouri, was given the task of subduing the Indians and driving them onto reservations, for they were still causing quite some trouble. Colonel H. Grierson carried out a reconnaissance for a suitable location for a fort and chose a plateau overlooking Cache Creek — the same plateau that Captain Marcy had written about sixteen years before. General Sheridan led the campaign against the Indians himself, and he approved of the site Colonel Grierson chose for the fort.

On 8 January 1869, General Sheridan drove the first stake marking the site of permanent buildings on the plateau, and thus the post was established, initially to be called Camp Wichita.

When General Sheridan left on 23 February 1869, Colonel Grierson assumed the position as the first commander of Camp Wichita. Under his command he had 6 companies of cavalry and 2 of infantry, about 600 men. Later the strength of the post was raised to 6 cavalry and 3 infantry companies.

The post was renamed Fort Sill on 18 August 1869, for Brigadier General Joshua Sill, a West Point classmate of General Sheridan's who had died in the Civil War. (General Sill had had no connection whatsoever with the military establishment that now bears his name).

Several stone buildings were erected at Fort Sill in 1870, one of the first being the Post chapel. (This beautiful building, the second oldest place of worship still in use in the state of Oklahoma, now displays a fine stained glass window depicting Saint Barbara, behind the altar). Other early buildings were the officers' quarters and it was on the porch of the commanding officer's house that General Sherman nearly met his death.

The Commanding General of the United States Army, General William Sherman, visited Fort Sill in May of 1871. He wished to personally investigate charges that the white settlers and soldiers were mistreating the Indians, and that the Indians were acting belligerently towards the whites. While parleying with some Indian chieftains on the porch of the commanding officer's house, an unsuccessful attempt was made on the general's life. Since that time this building has been called 'Sherman House' and is traditionally occupied by the post commander.

Another personality of note who was stationed at Fort Sill in the early days was Lieutenant Colonel (Brevet Major General) George Custer, who commanded troops of the famous Seventh Cavalry Regiment.

Until the last years of the nineteenth century soldiers from Fort Sill continued to fight, and eventually subdue, the Indians. From 1875, to help them fight Indians, they actually employed other Indians as members of the Indian Police, the Scout Department and 'Troop L' of the Seventh Cavalry Regiment. One of the scout detachment's more notable alumni was an Apache named Geronimo. He and other homicidal Apaches were removed from

Arizona Territory, where they had been responsible for much murder and pillage, to Fort Sill in 1894. Geronimo saw out his life at Fort Sill, both in and out of uniform, until his death in 1909. He was frequently 'rested up' in the guardhouse after drinking bouts; this building is now known as the 'Geronimo Guardhouse' and it housed the first part of the now extensive and very fine US Army Field Artillery Centre Museum.

Fort Sill in the Twentieth Century

In 1901 the US Government decided to open up parts of the Indian Territory to settlers, though Indians living in the territory were given some of the land. About five miles south of Fort Sill a new city, to be the seat of the new County of Comanche, was founded. The city was named Lawton, for Major General Henry Lawton, a former Fort Sill Quartermaster, who died in the Philippines in 1899. Lawton now has a population of about 70,000 people.

Although the end of the Indian Wars brought to a close the usefulness of Fort Sill as a frontier post, the establishment was maintained as a home for some cavalry units because of its permanent buildings. On 9 January 1902 the 29th Battery of Field Artillery reached Fort Sill — the 'Redlegs', (the US Artillery's nickname) had arrived at their future home. In June of 1905 Fort Sill was designated as the temporary home of the US Artillery Centre. (This designation, however, was not made permanent until 1930). The cavalry left Fort Sill in 1907.

At about this time the US Army was considering closing down some of its smaller posts and consolidating troops into larger ones. The people of Lawton successfully petitioned the US Government to make Fort Sill one of these larger posts and the extensive construction required to build the 'New Post' commenced in June of 1909.

The original part of Fort Sill became known as the 'Old Post' and this area consisted of the parade ground, with its flanking stone buildings, the Old Post Corral, the Geronimo Guardhouse, the hospital, and some other minor buildings. Two sides of the parade ground, which is still used as such on ceremonial

occasions, are occupied by officers' quarters, while the buildings on the other two sides are now storerooms, offices and parts of the museum. The Old Post Corral had been built in 1870 to dissuade the Indians from stealing the post's horses. It was also intended to be a final strongpoint in the event of attack, though this never proved necessary. In the centre of the corral there now flies a US flag displaying 37 stars, the number of states in the Union when Fort Sill was established. In 1962 the Old Post was declared a Registered National Historic Landmark and is an apt monument to the 'Old Army'.

The US Artillery School had been situated at Fortress Monroe, in Virginia, but in 1907 the US Artillery was split into Field and Coastal Defence branches. Fortress Monroe continued to teach coastal defence gunnery, but struck all reference to field artillery from its syllabus. As a result, field artillery was just not formally taught in the US Army. Efforts to correct this situation were not made until November 1910, when it was decided to establish a field artillery school at Fort Sill. On 5 June 1911, Captain Dan T. Moore became the first commandant of the 'School of Fire for Field Artillery'. Thus the US Army Field Artillery School was born.

Military aviation in the US Army was also born at Fort Sill, when the 1st Aero Squadron was established there in 1915. However, it was not until 1917 that a proper airfield — the Henry Post Field — was built. This airfield now has a 5,000 feet runway and is capable of handling such aircraft as the Boeing 707.

US entry into World War I necessitated the building of several military training camps. One of the major ones, Camp Doniphan, was set up on the Fort Sill Military Reserve and many 'Doughboys' trained there. One of the battery commanders of the 129th Field Artillery Regiment at Camp Doniphan in 1918 was a Captain Harry S. Truman. In later years this distinguished American, even as President, retained the rank of Colonel of the Field Artillery (Reserve).

The US Army's School of Infantry has also resided at Fort Sill from 1913 when the 'School of Musketry' was moved from the Presidio of Monterey in California, until 1918 when the

renamed 'School of Infantry' was again moved to its present home at Fort Benning, Georgia. An Officer Candidate School operated at Fort Sill from 1941 until 1946. It was reopened in 1951 and has remained active to the present time. Fort Sill also housed an Air Training School from 1942 to 1954.

Fort Sill and the Field Artillery Centre Today

If the number of troops, battalion-size units and support facilities are used as the criteria, Fort Sill must be considered to be larger than the whole of Eastern Command. A major general commands 29,000 troops and 5,000 civilian staff at the post. In physical size, the garrison area and ranges cover 94,000 acres. The military reserve is 27 miles long, and varies from $2\frac{1}{2}$ to 9 miles wide. The 25 battalion-size units on the post include artillery, infantry, engineer, transportation and ordnance units. There are also numerous smaller sized units.

The major departments and formations at Fort Sill today are:

- HQ US Army Field Artillery Centre and Fort Sill (USAFACFS)
- US Army Training Centre — Field Artillery
- US Army Field Artillery Aviation Command
- III Corps Artillery
- US Army Combat Development Command — Field Artillery Agency
- US Army Field Artillery Board
- US Army Field Artillery School (USAFAS).

Other organizations include a vast array of engineer, medical, transportation, security, administration, planning, management, logistical, comptrollership etc. units and departments.

HQ Command USAFACFS. This is the Commanding General's HQ and is the command and administrative structure for the whole post.

US Army Training Centre — Field Artillery. Two Advanced Individual Training Brigades and the Fort Sill Academy form

the basis of this organization. The 1st Brigade has three Canoneer Training Battalions, and a Self-Propelled Training Battery, while the 2nd Brigade has a Missile Training Battalion and a Survey-Fire Direction Centre Training Battalion. New artillerymen are posted here after their eight weeks of basic military training. The Fort Sill Academy has a Drill Sergeant School and a NCO Academy, and also conducts Leadership preparation courses and Instructor Training courses.

US Army Field Artillery Aviation Command. This is both a training and support command and has two aviation battalions. The 21st Aviation Battalion has one Medium Helicopter Company (Chinook) and one Heavy Helicopter Company (Flying Crane). The 1st Field Artillery Aviation Battalion has a School Support Company and a General Support Company. Almost all types of aircraft in the US Army aviation inventory are to be found at Fort Sill.

III Corps Artillery. This formation provides all elements of USAFAC with artillery support. It also maintains a combat ready artillery strike force and has other responsibilities towards HQ III Corps. In all there are fifteen artillery battalions organized into three artillery groups, representing all missile and cannon equipments in service with the US artillery today. An infantry battalion, with an attached tank company, is also part of the formation and is employed in combined arms training.

US Army Combat Development Command — Field Artillery Agency, and US Army Field Artillery Board. These two organizations have research, development, test and evaluation responsibilities in connection with field artillery weapons, equipments and systems.

US Army Field Artillery School. (USAFAS). The school is composed of various administrative, logistic and planning organizations, an Officer Candidate School, and seven academic departments, which are:

- Gunnery Department
- Communications/Electronics Department
- Target Acquisition Department

- Artillery Transport Department
- Tactics and Combined Arms Department
- Guided Missile Department
- Non-Resident Instruction Department.

The roles of Gunnery, Target Acquisition (Locating), and Artillery Transport Departments should be obvious, but details about the other departments are worthy of note.

Communications/Electronics Department teaches radio and line communication and also has an Automatic Data Processing Branch, the US Army having realized the desirability of making its officers familiar with the potential use and limitations of computers as a management tool. This department also runs Fort Sill's internal television service, producing their own videotaped material and showing other TV material as required. Many classrooms have several TV sets permanently set up in them.

Tactics and Combined Arms Department teaches all arms, joint service, and artillery tactics. It is also responsible for such subjects as Military History, Military Justice, Management, Communicative Arts Staff Functions, and Nuclear Warfare etc.

Guided Missile Department is concerned with instruction on the Pershing, Sergeant and Lance missile systems.

The Non-Resident Instruction Department prepares and conducts an extensive range of correspondence courses on all aspects of field artillery for Reserve and National Guard personnel and will also provide complete lesson plans, with training aids, to artillery units on request.

The Officer Candidate School conducts a six-month course, after its cadets have completed their basic military training, and graduates are commissioned as Second Lieutenants. The school trains Field Artillery Officers, (though not all graduates go into the Field Artillery Branch), unlike OCS Portsea, or OTU Scheyville, which graduate infantry officers and leave corps training to other AHQ schools.

Instructors at USAFAS generally work in a far more specialist field than do instructors at AHQ schools. As may be expected, they utilize some very fine training aids and training areas.

The firing ranges at Fort Sill are extensive and have various types of terrain to test the skills of budding forward observers. Several permanent stands are set up for demonstrations. The largest of these demonstration areas is used for periodic artillery and air fire-power demonstrations, which are open to the public as well as to all members of USAFAC. This particular demonstration includes the firing of every current US field artillery weapon from the 105-mm howitzer to the Honest John missile, the demonstration of fixed wing and rotary wing aircraft fire-power and the massing of fire of about 80 guns. As many as 10,000 people have been seated to watch the 2-hour fire-power demonstration.

Any Australian soldier who hasn't been exposed to an army so much larger than that of Australia's, cannot fail to be overawed by the sheer size and complexity of Fort Sill. Although it is not the largest military establishment in the USA, it is one of the largest. Few field artillerymen from any nation could fail to be impressed by much of what they would find at Fort Sill. Judged by most criteria it is an impressive, modern military establishment. Happily, Fort Sill has retained a certain atmosphere of the time it was a frontier post in the 'Old West' and has been able to maintain a most satisfying balance of modern technology and part of America's national heritage. □

BOOK REVIEWS

SINGAPORE: THE CHAIN OF DISASTER, by Major General S. Woodburn Kirby. Cassell, London, 1971. 270 pp. U.K. price £3.15p.

Reviewed by Chaplain L. A. Barber, RNZIR, Singapore

WAR came to Malaya on the 8th December 1941 when the first wave of Japanese troops landed at Kota Bharu and Japanese bombers attacked the undimmed lights of Singapore City. By the 15th February 1942 the Imperial Forces in Malaya — British, Malay, Indian and Australian — had been forced down the Malayan Peninsula into an area of only thirty square miles of Singapore City. On that day Lieutenant General A. E. Percival, the General Officer Commanding Singapore, realistically acknowledging the depleted and exhausted state of his troops, aware that the city's water reserves would be exhausted within twenty-four hours, and haunted by the fact that one million Asians within his defences were a legitimate target for Japanese aircraft and artillery, surrendered his forces to Lieutenant General T. Yamashita.

In this carefully organized and well argued work the British official historian of the war against Japan discusses the chain of disaster that held as its last link Percival's capitulation. Woodburn Kirby begins with an assessment of the arguments set forward in 1921 in favour of Singapore rather than Sydney as the proposed Far East base for the Royal Navy. Within a clear chronological framework he relates how sentimental re-

liance on the League of Nations, reduction of defence expenditure, the 'Stop-Go-Stop' policies of a succession of governments, together with inter-service rivalry, delayed the building of the Singapore Naval Base. The author pays close attention to the War Office's failure to relate the defence of Singapore to that of the Malayan Peninsula and shows that as early as July 1938 Major General William Dobbie, then General Officer Commanding Singapore, warned the Chiefs of Staff of the danger of an attack on Singapore from the north subsequent to the invasion of the eastern coast of Johore. General Woodburn Kirby supports his argument that the War Office disregarded repeated warnings of the vulnerability of Singapore by noting that during the early 1930s the staff and students of the Imperial Defence College, London, conducted a series of war games based on a simulated Japanese invasion of Britain's Far East. He observes that year after year the students, as a result of examining Japanese military history, came to the conclusion that Japan would attack without a previous declaration of war during the north-east monsoon and would effect a landing, or landings, well to the north of Singapore in southern Siam or northern Malaya, with the object of gaining control of existing airfields in those areas, and then advance southwards towards Singapore along the main road and railway.

Of the personalities involved in leading a defence against the Japanese invasion only the Chief Engineer, Brigadier I. Simson, later Director of Singapore's Civil Defence, emerges well. The Governor, Sir Shenton Thomas, is portrayed as an easily led civil servant who failed to appreciate the possibility of British Military defeat. Lieutenant General Percival's failure to prepare defences in southern Malaya and northern Singapore is highlighted against the information that he was, as a colonel, Chief of Staff to Major General Dobbie at the time of the general's warning to the Chiefs of Staff in July 1938. The Australian Major General H. Gordon Bennett is blamed for numerous tactical errors and especially for the unauthorized abandonment of the critical Jurong line on the 10th February 1942; an abandonment that forced Percival to surrender. Woodburn Kirby's most pathetic etching is that of the 62 years old Commander-in-Chief, Far East, Air Chief Marshal Sir Robert Brooke-Popham, who

was out of touch with technical developments in the R.A.F. and had developed a habit of falling asleep during important defence conferences.

In *Singapore: The Chain of Disaster* a precise account is given of each battle fought and a careful appraisal is made of the tactics of both contending forces. Woodburn Kirby supports his account with several excellent battle maps. There are no photographs included, notwithstanding the accessibility of aerial photographs of the vital strategic areas mentioned, and of the naval base. While of especial interest to students of military history and battle tactics this work, completed shortly before the author's death, gives an appraisal of the diplomatic, political and social climate preceding and during the invasion of Malaya and Singapore that should draw to it a much broader range of historian-readers. □

THE ADMINISTRATIVE STAFF COLLEGES AT HOME AND OVERSEAS: The Leverhulme Trust; Lyon, Grant and Green, London, 1968; $3.70, Hardcover, pp 104, illustrated.

Reviewed by Major A. R. Howes, RAASC, Australian Staff College.

A copy of this descriptive history of the growth since 1948 of Administrative Staff Colleges is held by the AHQ Central Library (371.201 TAY). With greater emphasis on management training and education since publication of Army Training Instruction 1-2 in 1970, this short book is recommended reading for anyone concerned with management development.

The author is H. J. B. Taylor, Director of Special Projects at the Administrative Staff College, Henley-on-Thames, some thirty miles west of London. Mr Taylor was a member of the first session there in 1948 and has had a continuous association with administrative staff colleges since then. He was a member of a Technical Mission to Harvard (USA) and was loaned as a consultant to the European Economic Community (EEC) to study and report on management development in Europe.

The Principal at Henley, Mr J. P. Martin-Bates, says in a short foreword: '. . . for those who may contemplate starting a Staff College or similar institution in the next few years, this book will be essential reading'.

The first Staff College was founded by Colonel Le Marchant for the British Army in 1801. One hundred and forty-seven years were to pass before a staff college for industry was established. After World War I it became apparent that, in a competitive international economy, even British industry with its long start in the Industrial Revolution would not retain its place unless more attention was directed to the basic systems and techniques of business. The Americans in particular were studying commerce with enthusiasm. 'Trade' had little status as a profession and British universities remained aloof from business education and vocational subjects.

During World War II many men who were recruited for military service from subordinate positions in industry earned rapid promotion to senior ranks and established a claim to managerial occupations on their return to civilian life. Leadership was understood to be 'not simply a natural gift . . . it was obvious that many of the managerial attributes which they acquired would not have developed without this experience in a different environment'.

Taylor then describes how the foundations of an administrative staff college on a national level were laid in 1944-45.

'Not unnaturally the war experience of many business men with the Services Staff Colleges led to suggestions that Industry itself might well use some educational experience of this kind . . . . Some of the writers had in mind a single institution for a single large undertaking but there were one or two who considered a College for Industry as a whole.'

One such man was Colonel L. F. Urwick in September 1944, with a paper 'The Case for a Staff College for Industry'.

Taylor continues:

'A small group of prominent men in Britain . . . from Government, Local Government, Industry, the Church and the

Universities . . . were wise enough to realise that a new institution (a national administrative Staff College) would only be successful if it received wide support from leading men . . . they met with a heartening response.'

Sir Hector Hetherington, Principal and Vice-Chancellor of Glasgow University, wrote a leading article which appeared in *The Times* in 1945. In it he outlined the basic aims and objects for an Administrative Staff College. These were remarkably prophetic and remain relevant to our situation. Taylor quotes from his article:

'Administration is not an end in itself. The Administrator's business is to provide conditions under which the work of a team can come to good effect in the achievement of some co-operative purpose. Administration is a word of varying range. At one end of the scale is the simpler executive function of applying known rules to the given case, sometimes not so simple. At the other end, administration shades off into leadership, policy making and planning.'

Sir Hector discussed the challenge to managers to consistently marshal material and human resources of variable quality and availability, at the right time. He continued:

'In these things there is an order and a technique which are not simply gifts of nature. Training helps . . . more and better administrators will certainly be wanted.'

On education and training facilities Sir Hector said: 'The best thinking springs from practice, but a man who by thinking has more thoroughly possessed himself of what he is and does, is ripe for greater responsibility . . . . Hence two conditions are necessary for the success of the College. The first is that it should find a staff of the right kind — experienced, lively, knowledgeable and above all, skilled in the Socratic art. The second is that the student body should be drawn from a sufficient variety of administrative callings. Variety is indispensable if the College is to achieve its fertilising purpose of mutual criticism and mutual stimulus.

'There is another reason also. The College ought to be a meeting place of the two main categories of administrators —

the officers of the public and private services. In future, as increasingly during the war, they must work together. (Reviewer's emphasis). It is important that they should understand the very different situations in which they are placed and the different responsibilities which they carry. Much frustration will be saved thereby. It is even more important that each should acquire, so far as may be, the characteristic virtues of the other and know its own characteristic defects. That is the way of amendment.

'For the final objective of all this enterprise is not theory, but better practice directed to the fuller service of the public service. That is how the Administrative Staff College will be judged, and how it will wish to be judged.'

Most industrialized countries after World War II were thinking along these lines; emergent nations are faced with the same considerations today.

In October 1945 the Administrative Staff College was incorporated as a company limited by guarantee and, since it was not profit-making, was recognized by the British Government as a Charity for purposes of revenue.

Other Staff Colleges followed, while many institutions use Staff College methods:

1952 — The New Zealand Administrative Staff College.
1957 — The Australian Administrative Staff College at Mt Eliza.
— The Administrative Staff College of India.
1960 — The Pakistan Administrative Staff College.
1965 — The Philippines Executive Academy.
1966 — The East African Staff College (a co-operative venture by Kenya, Uganda and Tanganyika).

Maurice Brown, Deputy-Principal of the Australian Administrative Staff College from its inception and Principal from 1964 to 1970 was asked in 1966 to describe 'The First Decade' of Mt Eliza. Writing in *The Personnel Practice Bulletin*, Vol. XXII No. 3, September 1966, he analysed the College's development. His views on the worth of management development — that judicious combination of education and training — are of sig-

nificance to the Australian Army with the Kerr Committee decision to recognize managerial responsibliity in men and women in the rank of sergeant and above. He said:

'The development of balanced, mature, skilful managers is not a luxury or a lottery. It is a job, and a job of great importance . . . .

'I am often asked how one assesses the results of a venture like ours. We argue among ourselves, of course, about the validity of various measures of success. Looking at the process as a whole, however, I would say that the people who had passed through the college have had an opportunity to acquire a quite substantial body of information, an insight into their own strengths and needs as managers, and a better perspective in which to practise their craft.'

Maurice Brown recalls how he had asked the chief executive of a large Australian company if he had some comments on the shape of future developments at the Staff College; and records his answer:

'I am not very concerned about the detail of what you do at the College,' he said, 'but I have noticed that when our men come back they are more confident in meeting complex problems and more competent in solving them, they are certainly more tolerant towards their fellow men, and they are on the whole, I think, a little bit wiser: and while you continue to do that, I shall continue to send them to you.'

Subjective judgments like these are difficult to check by quantitative means. But the view that management development makes a valuable contribution to the performance of managers is justified — what *is* critical is the *quality* of the development programme.

This book, *The Administrative Staff Colleges at Home and Overseas,* provides a useful background to assess management development programmes for the Australian Army, coupled with the wish for greater rapport with the civilian community. May we yet see exchange Directing Staff between the Australian Services and Mt Eliza? □

Letters to the Editor

Dear Sir,

I was so pleased to get the October 1971 number of the *Army Journal* and to read in it the excellent review of my book, *In This Sign Conquer,* the Story of the Army Chaplains, by Major A. R. Howes. The book is still in print and you could get further copies from Richard Mulkern, A. R. Mowbray & Co Ltd, The Alden Press, Osney Mead, Oxford OX2 OEG.

807 Nelson House,
Dolphin Square,
LONDON, SW. I.V 3PA.

Brigadier The Rt. Hon. Sir John Smyth, Bt., VC, MC. □

Copies of this book are being obtained for the Army Library Service — Editor.

Many, Many thanks for sending me the *Army Journal* No 270 for November 1971 in which I read the article 'Quinn of Quinn's Post' by Colonel Argent.

Naturally I was thrilled as I was on Quinn's right up to the morning of May 9th when I received a G.S.W. Rt Elbow and that meant 'Finis' to Gallipoli.

Our Colonel at that time, now Major General J. H. Cannan Rtd, has asked me to obtain a copy for himself and I might tell you that I have requests from all who served at Quinns so wonder if it would be possible to have a copy for General Cannan and at least two for our Angels Remembrance Club.

We are indebted to Colonel Argent for his research work and for his graphic description of the ordeal of serving at Quinn's Post.

Hon. Secretary
Angels Remembrance Club
15th Battalion A.I.F.
BRISBANE, QUEENSLAND.

J. J. McDonald. □