

MILITARY IN NATIONAL DEVELOPMENT

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Apart from certain political and economic problems, there is one thing that all less developed countries have in common: some form or other of a military establishment. These vary widely in size and sophistication, ranging from Benin's 1 650 men, 5 armoured cars, 6 transports and one helicopter, to India's 1 055 500 men, approximately 1 900 tanks, 40-odd major combat vessels including 1 aircraft carrier and some 980 combat and 200 transports and around 300 helicopters. While the military establishments of the less developed countries vary as widely as most other aspects of their countries they too have something in common: all have some capability for political intervention and/or assisting development in the economic and technical field. This paper shall attempt to present a short overview of some of the military establishment's non-martial capabilities and their utilizations.

Most less developed countries have similar political/sociological problems resulting from their progress towards independence, no matter how protracted, being too fast. Thus most less developed countries were unprepared for the problems that beset them once their former colonial masters had departed. Notable among these problems is a fairly general lack of trained personnel and suitable training facilities. This results in overwork, inefficiency, growing discontent, both within and with the public service and corruption. Apart from unsuitable elements being recruited into the public service and bringing corruption and nepotism with them, this, last, can start in a very small way: the shortage of personnel is almost certain to lead to long delays in the processing of work — thus tempting private individuals to try to speed up the handling of their affairs by means of a bribe. This can soon become essential to achieving any cooperation from a government department at all. This overworked, harrassed, inefficient and corrupt administration is now faced with apparently well-nigh insurmountable problems in many fields. Possibly the most important of these is the imposition of the chosen form of government, whatever

it may be, on a population possibly totally unused to organized government and almost definitely not used to thinking at a national rather than at a local, tribal or even family level. Worse still the greater part of the population is probably more interested in where to-morrows food is to come from than in who is running the country and how he is doing it. Further there is the problem of pressure groups (or even just individuals) pushing their own, often extreme, ideas: thus traditionalists will wish to avoid any change at all, others would advocate a radical form of government, massive industrialization, no industrialization, collectivism or whatever. Regardless whether their motives are altruistic or selfish or, as is most likely, somewhere in between, the result is the same: wherever the government and administration look they see opposition and apparent confusion. Considering that a similar struggle is also going on within the government itself and possibly the administration as well, it is little wonder when some of the, up to then, honest and hard working officials lose courage and, as they can't help their country, either give up altogether or start to help themselves. Thus the situation as regards corruption and inefficiency is likely to worsen and this, in turn, could well help keep alive or even foster tribalism and regional differences based largely on, apparently justified, mutual distrust.

Adding to this grim picture the general economic problems and the general confusion, disinterest, distrust and dislikes prevalent among the population newly exposed to nationhood, it is easy to foresee the start of serious discontent. This is further fanned by the scheming and manoeuvring of potential dictators at all levels and the ever growing disparity between slowly (if at all) rising incomes and the rapidly rising prices of an as rapidly expanding range of new, exciting and eminently desirable consumer goods.

Contrasting with this, admittedly extreme, background we have a relatively well educated, well nourished, healthy, disciplined and apparently unified body of men — the military. To add to

the contrast the military machine is usually fairly impartial, honest and efficient as well as being well-staffed with the appropriate specialists. When one adds to this the comparatively good pay of the military and the fact that at all levels it is usually staffed by men from the urban and (predominantly) rural lower middle-class, it is easy to see that the military might enjoy considerable prestige: conceivably greater than that of the civilian government. Within the military itself there will develop some opposition to the civilian government: few military officers can passively stand by and watch corruption and inefficiency, particularly the latter. Further, the middle-class backgrounds of many of the officers and non-commissioned officers are good basis for developing more or less mildly socialist ideas on how the country should be run. To add to this many military personnel will feel hard done by when comparing the excessive pay and perquisites of the politicians and party officials to their own, often not forthcoming, salaries. Combining these internal feelings with its external prestige the military may soon come to feel that it should take some form of action to pull the country out of the quagmire. Such action can take several forms but basically the choice is between 'leaning' on the government until it toes the line and actually seizing power. The former is, in effect, the threat of the coup and can, for instance, result in the appointment of officers to cabinet or public service positions or the granting to the military of a veto on certain matters. In the event of the second method being employed the military might, having made its point, hand the reigns of power back to a civilian government. Alternatively it could decide to retain power until it has pushed through its favourite reforms or until the political situation in the country has, in its opinion, stabilized sufficiently to allow the formation of a new civilian government. As a final alternative the military might well decide to retain power indefinitely, this is often the case after the 'second time round'. On the other hand, the military could conceivably decide to lend moral or even physical support to the existing government.

Full scale seizure of power has, of late, become very popular in less developed countries and this would, at first glance, leaving aside the question of franchise etc., not appear to be a bad solution considering the military's apparent advantages over the existing civilian administration including, for instance, its 'code of honour', technical and administrative expertise and its prestige. One must remember, however, that these aspects

are not likely to be present to the same extent that they would be in a developed country. There are several examples of successful military governments, the best, albeit historical, probably being the military governorship of Cuba under General Leonard Wood of the United States Army (1899 to 1902). General Wood 'meddled' in everything and was responsible for, among many other things, inoculation campaigns, new hospitals and asylums, road construction and even the establishment of the Cuban police force. This list of mediocre or even bad military governments is so long and well known as not to need detailing. It must be remembered, however, that:

- i not all these governments actually had bad intentions — many simply were not up to the prolonged effort of national government and,
- ii many non-military coups have also taken place and produced bad governments.

But while military government has advantages in the short run — e.g. cleaning up corruption, pushing through unpopular but necessary developments or law and order measures or the adoption of modern techniques — it appears less desirable in the long run. Inevitably it must stultify political development which, while it may be acceptable during the development stage, is likely to lead to opposition and even violence later on, with the added result that, if the military government is ever overthrown, the country will probably be worse off politically than before — although large scale economic growth during the period of military rule might reduce this problem. Similarly, while the military has many experts in various fields (depending, of course, on its size), it is unlikely to have enough experts to staff all the government departments and, in fact, unlikely to have experts in all fields. Further, it will lack the necessary manpower to administer the state. As a result it will be necessary to recruit civilians into the government thus providing a potential source of friction on top of that friction that will inevitably arise between a military government and the civilian population.

While it will also suffer from many of the weaknesses of a civilian government to various degrees, there is one great disadvantage of military government that is generally ignored: while fully concerned with national administration and government the military is unlikely to be able to devote the necessary attention to its primary task of defence. Worse still, its involvement in politics is quite likely to politicize the military thus removing what advantages it had over a civilian government.

The country would then be as badly off as before – worse, it would no longer have an effective and efficient military establishment. Thus we must come to the conclusion that, while a short term of military government may prove beneficial and useful, the military should, as a rule, avoid political involvement of any sort. This applies also to the role of pressure groups as these are prone to suddenly finding themselves holding the (baby) state in their unprepared arms. Also, any political role is likely to detract from the military's prestige and its usefulness as a neutral stabilizing factor. These factors are particularly important in a less developed country as here:

- i the military's role as a neutral stabilizing factor will be particularly important,
- ii its training and specialization level will be lower than in a developed country and
- iii it is unlikely to be as free of corruption or to have a 'code of honour' as more developed military establishments – for similar reasons to those that weaken its civilian government.

The economic problems of many less developed countries are also very similar. Most suffer from a generally low standard of living – with particular emphasis on the standards of health, nourishment and education. There is also a shortage of skilled and semi-skilled labour largely due to the aforementioned lack of education etc. Given a sufficiently low standard of health and nourishment combined, perhaps, with some old tribal traditions there may even be a shortage of unskilled labour. Further, most of these countries rely on agriculture as a cornerstone, or even foundation, of their economies. Lacking industry and, often, economically exploitable minerals, the only real option is to increase agricultural output – both to improve the nourishment of the population and also to provide an export commodity with which to earn the foreign exchange necessary for developing a modern commercial/industrial sector. But here they meet a number of obstacles:

- i Usually new, possibly slightly mechanized, methods are necessary if worthwhile improvements are to result.
- ii Similarly, for an export drive to succeed and to improve internal food distribution, both the transport net and storage facilities must be expanded and improved.
- iii Most of the usable land is often divided into very small plots which cannot economically be maintained and which are also unsuitable for any form of mechanization or, for that matter, for any thing other than subsistence farming. In other cases the land is often com-

munely held which, while providing a larger piece of ground, makes it possibly more difficult to introduce new methods.

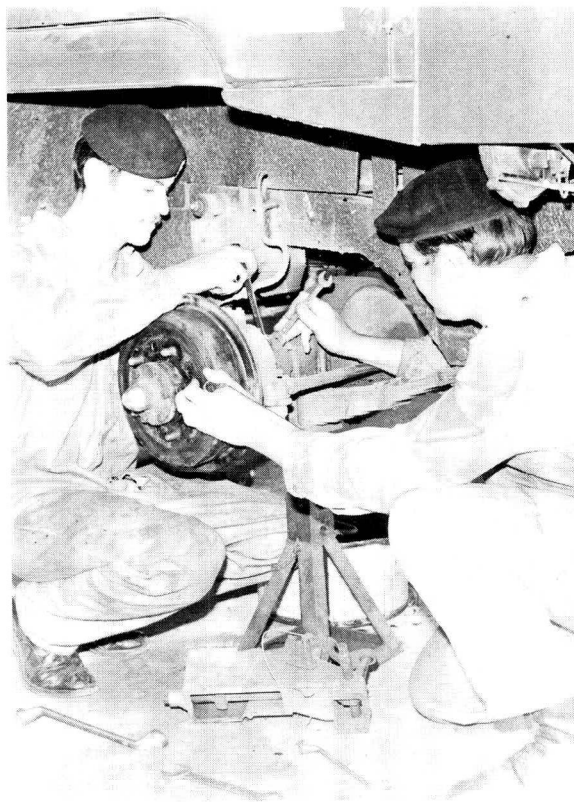
- iv Land reform, thus necessitated, will often be opposed by the chiefs, elders, witch doctors etc., who fear a loss of power and prestige if new methods are allowed to take root.
- v Similarly the individual small scale peasant farmer is often unwilling to give up his land for reasons of scepticism, sentiment and tradition.
- vi Mechanization and improvement of the transport system is difficult to carry out as there are very few suitably trained men available. Similarly the system of subsistence farming makes it difficult to collect the manpower necessary to run the handling and administrative side of food distribution and export, or for that matter, to find men to train as mechanics, drivers, etc.

Thus we seem to have a typical 'vicious circle' situation: agricultural output cannot be improved without the availability of extra manpower (trained and untrained) which will not be available until the necessary conditions for agricultural improvement have been met and, in fact, the agricultural output has risen. While collectivisation on the farms might help to overcome the problems of landownership and mechanization there, it will not help the manpower shortage in the other sectors of the economy. Thus it becomes necessary

- i To convince the agricultural population to adopt the new methods and
- ii To make it possible for them to use and benefit from these new methods.

To achieve the latter it will be necessary to:

- i Rearrange agricultural land into larger more economical portions,
- ii Provide basic machinery (e.g. tractors and trucks) and suitable seed, pesticides etc. and training in their use,
- iii Provide storage facilities in the production, distribution and shipping areas as well as transport between them.
- iv Provide sound communications between these and other areas to avoid the coincidence of a food shortage and a glut in two different parts of the country and to efficiently manage the transport system.
- v Provide local government representatives to give advice and to help in administration and maintenance as well as to maintain contact between the government and the local population.



Technical training continued during the period of national service.

- vi Provide adequate housing and medical facilities to care for the health of the agricultural population in particular.
- vii Provide education and training at all levels.
- viii Provide appropriate training and work for those who lose their land under (i) and now have housing and food costs to meet. Ideally these people would be employed in the handling, transporting and marketing of the, hoped for, increase in output.

Given the fact that both the government and the industrial sector suffer from the same problem as the agricultural sector concerning trained staff and that the commercial and industrial sectors cannot absorb much new labour due to the small size of the markets (little money in circulation — largely due to subsistence economy); these problems seem insurmountable. They can, of course, be overcome sooner or later — given outside aid possibly sooner. But all the while there is the military establishment sitting inactive on the sidelines and costing money. Surely within the limits of maintaining a credible deterrent it is possible to make use of its manpower and material resources.

The military establishment has a number of advan-

tages over all other sectors including the civilian government. One of these, assuming no intervention, is a relative political neutrality with perhaps a slight socialist bias but not enough, usually, to estrange the 'upper crust'. This is a valuable asset as it makes the military and anything it tries to achieve less suspect and more acceptable at all levels of the population. Similarly in less developed countries the military, due to its united and disciplined appearance, better health and pay, has a certain amount of prestige. Its role in disaster-relief then also heightens its popularity for some considerable time after such a disaster. But all we have so far is a body of healthy men who are relatively well organized and popular — not all that impressive. The only immediately obvious role is that of a labour pool. This should however, be avoided as far as possible so as:

- i not to waste what is in effect semi-skilled manpower
- ii not to lower their prestige or self-esteem and
- iii not to take work away from the unemployed which would be socially, economically and politically unsound.

To see what role the military can play we must take a closer look at it. From the general viewpoint its mere existence can be valuable — the

value increases with the rate of personnel turnover: e.g. ignoring other factors a 100% call-up would be the most valuable. This is due to the fact that the military establishment tends to look after its men well (particularly by comparison with other sectors in a less developed country) — otherwise they would be useless. Thus recruits are given regular and nourishing food, medical attention, hygiene training, literacy training and an idea of discipline. Apart from this it is possible to give pre-discharge training in many minor useful tasks and even in some semi-skilled fields: such as mending boots and tyres, basic bricklaying or carpentry, etc. Further useful training and also assistance can be provided by the various specialist corps of the three services (army, airforce and navy). To get a good picture of these it is best to look at them in detail. Let us start with the army.

THE COMMAND ELEMENT.

In many cases the army command staffs will have a higher staff-work and planning capability than the civilian government. Thus, apart from co-ordinating the army's own martial and non-martial tasks, they could, perhaps, assist in central government planning and co-ordination. Similarly the army-command might be in a position to give some basic courses on staff work and planning to senior civil servants.

SERVICES UNITS.

The Medical Corps:

While most armies tend to rely on conscripted civilian doctors to staff their medical posts in wartime, there is still a sizeable medical establishment in peacetime. Conceivably the military-hospitals might be better equipped and staffed than many of their civilian counterparts. The real usefulness of the medical corps, however, lies in the training of medical orderlies. During their national service period these medical orderlies can be posted to assist in military, civilian or even mission hospitals or to set up small dispensaries in the more isolated parts of the country. Once they are discharged they may elect to continue in such posts or, perhaps, further their studies in the medical field. But even if they do not, they still have a high level of medical training (including some specialization such as radiography and blood analysis). Similarly the medical corps often provides basic first aid and hygiene training to all recruits with similar results. This could, perhaps, even be

extended to holding classes in isolated villages, farming communities and slums. Further the medical corps can conduct or, if too small, at least provide some data and facilities for medical research. Another capability lies in the field of nutritional guidance and inoculation drives. Larger armies might even be able to train their own doctors although such a large army will probably only exist in a country where this would no longer be necessary — the obvious exception being India. Many armies also operate small veterinary establishments. While these actually belong to the quartermaster corps I mention them here for the sake of clarity. Such establishments could, in their field and limited by their size provide similar services to those of the medical corps.

The Technical Services Corps:

All armies have a relatively large technical services element to maintain their mechanical equipment and weapons. Men serving in such units are trained in various aspects of vehicle and machine maintenance and repair as well as, for instance, metal work. These units also have in use and hold stocks of the appropriate tools and equipment. This section of the army could therefore be invaluable in servicing, repairing and maintaining trucks, tractors, power generators, agricultural equipment and even locomotives and rolling stock. Similarly to the situation pertaining to the medical corps, national servicemen of the Technical Services Corporation may well elect to continue in similar work after their discharge — e.g. open or work in a small garage or engineering workshop or continue in government or private employ. This would be particularly the case if their training and service could count towards qualification as an artisan. Again similarly to the medical corps the Technical Services Corps could provide technical assistance in the outlying areas and train civilians. For instance, farmers could be trained in the use and maintenance of tractors, harvesters, generators and pumps. The Technical Services Corps might also prove useful in training railways and power generation staff.

Administrative Services Corps:

The Administration Services Corps could be instrumental in providing the new generation of government and business administrators. National Servicemen in the administrative units are automatically trained in general administrative work which could, in larger armies even include co-operating with computers. Their training could conceivably



From cars to gun turrets — a national servicemen utilizing his trade.

be broadened to suit them to future posts in government agencies or even in the private sector as employees or possibly running their own businesses. This is particularly the case when National servicemen have been given some specialized training in, for instance, financial administration or, at a lower level, book-keeping. Further, the Administration Services Corps could to some extent make up for a lack of government officials. In peacetime it could train more national servicemen that are necessary for its own requirements and these could gain valuable experience by running small government offices at the lowest levels — e.g. one in virtually every village. Apart from gaining experience they would be instrumental in maintaining contact between the central government and the military on one hand and local population on the other. Further, they would be able to give data and assistance to other departments or visiting experts.

Quartermaster Corps:

This corps can provide training and experience in a wide variety of fields such as stores administration, cooking, tailoring, bootmaking, laundry,

gardening, carpentry, bricklaying, building maintenance, electrical work, slaughtering and preparation of meat, baking and the storage and handling of goods ranging from explosives via weapons, equipment and clothing to food-stuffs and medicines. The peace-time use of this corps, apart from supporting other units civic-action programmes (all the various corps support each other) is probably best limited to training national servicemen in these various tasks, not only for the military but also to enable them to obtain work or even start their own business after discharge. I suggest this limitation so as to avoid interfering with and stifling any incipient economic growth which is most likely to start in these fields.

Transportation Corps:

Usually transport units are integrated into combat, quartermaster or other units, but, for the purposes of civic-action programmes, at least those normally in reserve or with quartermaster units can be considered separately. Their most important capability is obviously that they can provide transport facilities in areas or for goods not economical for private enterprise and failing other government transport.

This could conceivably include the operation of trains or even river craft. Similarly to the other corps the training given to national servicemen can also prove useful after discharge: e.g. 'driving and maintenance' and transport theory – the latter in the case of officers and senior non-commissioned officers.

The Corps of Military Police:

Apart from assisting other units in their civic-action programmes the military police are rather limited as regards their non-martial role. This is due to the fact that their involvement would almost always have political implication which should if possible be avoided. If necessary the military police could assist in the training of civilian police or even, for a while, handle many of the latter's duties – particularly in outlying areas.

Corps of Chaplains:

While the essentiality of 'getting religion' to development is, at the very least, questionable, it might prove necessary to woo tribes or groups away from the more restrictive forms of worship (e.g. taboos etc.). Further, the chaplains might prove useful in such roles as teaching, social guidance and public relations.

SUPPORT UNITS.

Corps of Engineers:

The Corps of Engineers is difficult to categorize as its component units fall into both the services and the supporting units categories.

- i The *construction units* would normally fall under services. These units have the equipment and training to undertake a wide variety of tasks including: well drilling, construction and maintenance of houses and bridges, construction and maintenance of all types of roads, laying of power and drainage, construction of dams, railway lines and possibly even tunnel work. Thus their usefulness to development is self-evident: similarly they can give valuable training in many fields ranging from bricklaying and bulldozer driving to surveying and engineering.
- ii The *combat engineer units* fall under the supporting units title. Their equipment and training, being more combat oriented is, however, likely to be less useful in non-martial tasks. Nevertheless they can carry out many of the

tasks mentioned above, albeit on a smaller scale. Their particular metier lies in emergency work (bridges and ferries) and the handling of explosives. This is due to the emphasis in their training on working at high speed under considerable pressure in hostile environments. One task that is primarily theirs and that is, unfortunately, growing in importance, is the disposal of explosive or otherwise dangerous devices. Their training, apart from that concerned with explosives, while still useful will not be as useful post-discharge as that offered by the construction units.

Signals Corps:

This corps operates and trains operators of radio, telephone and, in larger armies, teletype and telex equipment. Apart from the usefulness of the training and training facilities from the viewpoint of post-discharge usefulness this corps could provide, operate and maintain communications equipment in outlying areas where a full scale telephone network is not feasible or economical.

COMBAT UNITS.

(Armoured, reconnaissance, infantry, and artillery).

Apart from the artillery which has surveyors and explosives experts and the infantry, which, where and when necessary, could be a supplier of semi-skilled labour, the combat units are rather limited in their non-martial applications. This applies particularly to armoured and mechanized units which will, most of the time, be fully occupied with training and maintenance. Such units could, however, supply valuable dispensary, communications and technical facilities within their immediate area. Further, apart from the general literacy, etc. training already mentioned, men in these units – particularly the infantry – could be given more or less specialized training by other corps or even by civilian experts in various fields pre-discharge.

Both the airforce and the navy have similar units to those mentioned above which tend to be specialized along natural lines: e.g. airfield and harbour construction, aircraft maintenance, marine engineering and salvage. Apart from this each of these services has its own specialized abilities. The airforce has a fairly sophisticated meteorological capability and is also well equipped to carry out aerial photography, mapping and survey work. Most important, however, is its transport and lift

(helicopter) capability. This is particularly enhanced due to the good short take-off and landing, load and bad field capabilities of military transport aircraft and, of course, the special properties of various sizes of helicopters. These last, and some of the aircraft, also give the airforce an excellent rescue capability.

Generally the navy is the most limited of the three services as regards its non-martial role. Apart from training facilities, particularly in its specialized fields such as seamanship, navigation, shiphandling, marine engineering and dockyard work, its capabilities lie mainly in the roles of rescue and fisheries protection and patrol — the latter, however, has obvious political implications and should therefore rather be handled by some other agency. In riverine countries the navy is more important as it has access to large parts of the country difficult to reach by other methods and, thus, can take over many of the army's tasks.

Among the more political tasks that can be handled by all three services are: border and coastal patrol, assistance to customs and police, riot control and game park protection. As far as possible, however, these should be left to the appropriate organizations. Such organizations (e.g. police, customs, coastguard and game park authority) could, of course, be assisted by the seconding of military equipment and personnel until such time as they are themselves fully equipped.

To clarify this rather lengthy listing of the military establishment's non-martial capabilities let us now consider some examples. Generally speaking the best examples are to be found in Latin America where the military, due to their extensive political experience, have developed a particularly keen interest in national development. Their political involvement has now largely stabilized itself in that they either form the government or have more or less reconciled themselves to a non-political role.

The Peruvian military started very early. As of the 1920's the Peruvian Air Force started flying doctors and emergency supplies into remote airfields constructed under extreme conditions by army engineers in both the high and low jungles (high jungle — foothills of the Andes). Slowly this service became more and more regular until it finally turned into a profit-making airline operation. Slowly the airfields used by this 'airforce airline' have moved deeper into the jungles with commercial airlines serving the older, now better equipped, fields. Thus the Peruvian airforce in fact pioneered

air transport in this area. Additionally, amphibian aircraft were and are still used to serve riverine villages and lately helicopters are also being used to reach otherwise inaccessible areas. Somewhat later — in 1947 — the Peruvian army started a major road and rail construction programme to further open up the interior of the country and particularly the high and low jungles. With the growth of this net and the increasing ability of the civilian government and private groups to carry out this type of work the army engineers switched their attention to a rather more challenging project: The Trans-Andean Highway. Even more so than previous projects this one is largely financed by the civilian government. Apart from work intended to open up new areas, the army has also undertaken to build, maintain and, where necessary, to run schools and dispensaries in many jungle villages. Similarly it carries out smaller tasks: construction and maintenance of irrigation ditches and pipes, wells, power generators, small bridges and roads. The military as a whole also runs various centers to provide vocational training to the Indians. Once trained these Indians are, wherever possible, sent back to their home areas to work and pass on their new ideas and knowledge. A further step towards the opening up of the interior and bringing a greater part of the population into the economy (in the 1960's approximately 30% was not involved in the economy due to inaccessibility) is the army's *Frontier Colonization Program*. Families from all over the country, but largely from the less fertile or overpopulated parts, are encouraged to move to the newly accessible areas. They are given any necessary help to move and set themselves up in their new homes as farmers, traders or artisans. As far as possible local garrisons supply the basic social services to their immediate surroundings — many were set up with this purpose in mind. Where this is not possible the various specialists visit on a rotationary basis. The navy provides similar services along the rivers and the air force backs both by flying personnel, supplies and surveys.

The Brazilian military does much the same work with special emphasis on opening up the Amazon basin. One interesting variation on the theme is to be found in the *Project Rondon*. This programme, largely financed by the Ministries of Education and the Interior, involves students giving up all or part of their vacations to serve in the less developed areas. Here they help in their special field — e.g. teaching, medicine, engineering, veterinary science, agricultural science, etc. or just

generally make themselves useful. Much of the logistical backing is supplied by the army and the airforce provides the transport and lift capabilities to get them speedily and safely to and from the remoter areas. This programme is a very good illustration of the benefits to be reaped from co-operation between the military and various departments of the civilian government.

Generally the Central American republics follow the same lines as their bigger, southern, neighbours. However, due to their smaller size, smaller and less sophisticated military establishments and their smaller budgets they cannot conduct programmes on as large a scale. They tend to concentrate largely on smaller construction projects such as schools, dispensaries, wells, powerhouses, small bridges, feeder-roads and small emergency airstrips, as these are relatively cheap in manpower and funds and can be carried out using relatively simple equipment. Often locals are recruited to do much of the unskilled work. In these countries heavy emphasis is placed on educational and health programmes which are also relatively cheap in manpower and funds. These include inoculation programmes, regular visits by military doctors, emergency medical evacuation service and, for example, the Guatemalan army's nutritional centres. These not only provide food of a high nutritional content but also conduct research and collect data. El Salvador is a good example of the educational efforts in this region. Discharged army 'veterans' are paid a small salary in return for which they, in their home villages, collect a group of volunteers whom they, with assistance from the army, train as teachers. Together they then conduct adult literacy classes and also classes in simple arithmetic, agricultural methods and hygiene. An ingenious idea which well illustrates the wide scope of possible military civic-action, is the use of army bandmen as itinerant music teachers for a part of their service!

The Asian picture is somewhat fragmented with very different approaches in, for instance, South-east Asia, China and Pakistan. In South-east Asia the military establishments have for some time been more or less fully occupied in fighting a war against Communist-lead and backed insurgents. Thus they have been unable, even with United States aid, to do much towards the development of their countries. Some minor construction, educational and health projects have been pushed through as part of a 'hearts and minds' campaign and also to prevent the spread of disease among adjacent troops. To some extent

the training and pay gained by the large numbers of national servicemen will help with postwar reconstruction — assuming, of course, that the war will end. Similarly the large number of barracks, hospitals, roads, bridges, airfields and port facilities constructed or expanded to aid the war effort will also prove useful. Another side-effect is the flourishing blackmarket in everything from chewing-gum to brand new helicopters. While this is undoubtedly harmful it is at least helping to create a class of small to medium capitalists who might later prove useful to the economy when investing their ill-gotten gains in legal industries.

Much of what is done is, unfortunately, done by United States units rather than by the local troops. One interesting exception, however, is to be found in the *Mitrapab Education Foundation* in Thailand. This semi-official organization was founded when a Thai officer and United States advisor 'sheltered' in a school during a rainstorm. They found that the roof acted more as a strainer than a cover. The aim of the foundation is to build one solid, four-roomed school in each of Thailand's 71 provinces. After this the foundation will probably just up its sights and start building a second (or third, etc) school in each province. There are several interesting aspects to this idea:

- i The foundation is, only semi-official — it gets official approval and the use of some equipment but virtually no funds and little manpower.
- ii It is a completely integrated United States / Thai organization
- iii It relies on self-help by the local population to get a school built; the foundation only acting as a catalyst.

Having selected a suitable site a meeting is held with the local authorities and a sports skydiving-exhibition and a retreat ceremony are arranged. Cheap tickets are sold locally and these, plus donations from local traders etc., raise the necessary capital. The locals are also expected to provide the land, most materials and labour; the foundation only provides specialized labour and tools and hard-to-get materials.

Little unbiased information is available on the Chinese Peoples Army's involvement in development work. It is known, however, that a large proportion of this 3 000 000 man force is, in fact, part of the para-military labour corps. This corps is involved in most aspects of the Chinese economy

with particular emphasis on public works and agriculture. The Peoples Army is also considered to be the ideal tool for riot control and, in cases, general police work. All this has led to senior officers complaining that too little emphasis is placed on the establishment's purely and primary military role.

It is in Asia that we find what is probably the best example of what a military establishment can achieve in the development field given imagination and an interested government — Pakistan. The Pakistan military was particularly fortunate in having a semi-military government which was favourably disposed towards it. Apart from the more usual programmes the Pakistan military had several fairly original ideas. These were made possible by government approval of the investing of military pension, welfare and PSWR war funds in industry and other non-government stocks, in itself a highly original approach. Apart from the obvious benefit to the military of more rapidly growing welfare funds, this decision injected a large amount of capital into the economy. While initially the Pakistan military restricted itself to pure investment, it soon started financially supporting some industries and various colleges (technical, agricultural and commercial) as well as the university in return for which places had to be reserved for military dischargees to receive vocational training and in the case of firms, post-discharge work. Soon after, the Pakistan military founded a number of colleges which while primarily intended to provide pre- and post-discharge vocational training for national servicemen and veterans, are also open to civilians. This injection of funds and increase in the number of places available in educational institutions is obviously of great development potential. This programme has now reached the stage when the Pakistan military is starting and to some extent administering its own industries, including shoe-factories, rubber- and sugar-mills and Pakistan's only breakfast-food factory. The Pakistan military has, in fact, turned into the country's third most important industrializing and development agency. Initially these industries were started to provide more training and work facilities for dischargees, lately some are being started purely as business ventures.

In the field of agriculture the Pakistan military has been no less enterprising. National servicemen (and regulars) can opt for six to twelve months of agricultural training (or technical, commercial) towards the end of or after their service. Thereafter they are entitled to ground in one of the many agricultural

settlements started by the military. The size of the piece of ground they receive depends on the last rank held, length of service and merit. Towards this end the Pakistan military purchases uncultivated and mostly unsettled land from the government in large tracts. It then determines the most suitable crops for the region by means of extensive laboratory tests, field tests and, often, the establishment of an experimental farm — often partly staffed by foreign experts. When this process has been completed a number of settlements are laid out with all facilities including schools, dispensaries, road and telephone communications, electricity and sewage. Once the selected families move in they receive technical and financial assistance for approximately two years to enable them to adjust to civilian life and to settle in into their new professions properly. Apart from the obvious benefits to agriculture (increased production and research) there is another: residents of surrounding areas are free to make use of all the facilities of the settlements and are also free to ask for advice and aid from the appropriate experts.

To further this programme the military has also entered the field of processing and marketing. Apart from the breakfast-food factory the best example is probably one area which was found to be eminently suitable for sugar cultivation but where the few residents had never grown sugar. An experimental farm was immediately started and experts were imported to decide on the best varieties of cane, the most suitable fertilizers, etc. Then the settlements were started and, as there was none in the vicinity, a sugar mill was built. Since then the mill has been extended several times and thought is being given to establishing industries to process its byproducts. Considering the Pakistan military's programmes it must be borne in mind that:

- i They were conceived primarily to help military dischargees and to increase the funds available for pensions etc. Their development aspect is really only a fortunate by-product.
- ii At all times contact was maintained with the appropriate government ministries so as to avoid interfering with existing or expected private enterprise.

All in all it is a well-nigh perfect example of what a little imagination, initiative and co-operation can achieve.

The African militaries, generally, have done little in this field. This can be attributed to two main reasons:

- i Their excessive political involvement and
- ii their small size and low degree of sophistication of equipment and training.

They have, however, carried out smaller projects such as well digging and the building of small bridges. The military establishments of the Middle-East have also done relatively little in the development field for a number of reasons such as political involvement and the conduct of a number of wars. Exceptions to this include Israel where the army has been instrumental in the establishing of a number of settlements which were started for security reasons and have, over time, become economically viable. The Israeli army also conducts several training/educational programmes such as the *Nahal Programme* which combines military and agricultural training. Another exception is Turkey where national servicemen are used as teachers or, in the case of graduates and qualified artisans, as specialists to assist in the less developed areas of the country. In the developed countries of Europe and North America the military's role has been generally limited to research. It must be stated, however, that there appears to be an increase in the non-martial use of the United States military. The corps of engineers has been, and increasingly is, instrumental in the construction of many dams and canals, for example. Similarly the 'Green Berets' or special forces have been operating assistance missions in the poorer areas such as the Appalachian region for some time. In Europe the use of the military is generally restricted to internal construction and development work. Before World War II the German military was, however, widely engaged in road, rail and bridge construction. They went even further and used dive bombers to remove tree stumps in newly felled areas – a good combination of training and civic action! The Luftwaffe, to give another example, used to maintain high altitude aircraft at strategic points to help in the treatment of respiratory diseases.

Largely the 'non-use' of the military in these areas is due to the highly developed state both of private enterprise and civilian government. The importance of military research programmes should, however, not be underestimated: some examples apart from the obvious ones include cures for typhoid and cholera, a vaccine for spinal meningitis, aerosol sprays generally and an aerosol that stops bleeding, the freeze-drying of food stuffs, microwave ovens, a technique to convert waste cellulose into glucose, a boat to skim oil slicks off the watersurface and a light

bulb so small that it can be passed through the eye of a needle. The more obvious ones include much of the theory behind modern aviation, rocketry, computer science and even administration.

To sum up, the military establishment of a country is, depending on its size, sophistication and state of financial health, capable of assisting a nation's development over an extremely wide spectrum ranging from the incidental advantages gained from training such as increased literacy and hygiene to major construction and research programmes. For such aid to be effective a number of 'rules' must, however, be adhered to:

- i The military must never interfere with or hinder honest and efficient private (or civilian government) enterprise – it must supplement but never supplant private and governmental groups.
- ii It must not take jobs away from the unemployed and, in so doing waste its own resources (e.g. training).
- iii All projects must first be thoroughly studied to avoid potentially embarrassing or even dangerous political tie-ups and the creation of economic problems. This is probably best done by full cooperation with the appropriate government departments.
- iv It should seek to avoid political involvement of any sort.
- v Possibly the most important: it must never lose sight of its primary mission – the deterrence of attack and, failing this, the successful conclusion of operations.

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For the past two years the Bundeswehr has in co-operation with the German Red Cross, the local university clinic, police and fire department operated a rescue service at Ulm. Using radio communications and helicopters, together with civilian operated ambulances and mobile accident units, it has collected some 1000 civilian patients and transported them to the clinic for treatment. The patient is transported by helicopter from the scene of the accident, or the nearest flat spot, to the clinic. Usually the service helps in cases of or train accidents, bad fires or heart attacks.