'Limitation of Armaments in South-East Asia: A proposal'
Arms Limitation in South-east Asia: A Proposal

RON HUISKEN

A publication of
The Strategic and Defence Studies Centre
The Research School of Pacific Studies
The Australian National University
Canberra 1977
The last decade has been a particularly turbulent period for South-east Asian countries, resulting in rising military expenditures and expanding arsenals within the region. Despite the ending of the war in Indo-China powerful pressures remain that are likely to provoke a continued rapid expansion of the armed forces in the region. This paper attempts to identify the more important forces working in this direction and suggests a modest scheme which the countries of the region could implement to counter the influence of some of them. The main objective of this proposal is to moderate the rate of increase in military expenditure and thus minimise the constraints that this expenditure will place on economic and social development in the future.

Robert O'Neill
Editor and Head, SDSC
Ron Huisken received the degrees of Bachelor of Economics (Honours) from the University of Western Australia in 1968 and a Master of Social Science from the University of Stockholm in 1970. He then joined the Stockholm International Peace Research Institute (SIPRI) and subsequently lectured in economics at the University of Malaya during 1970 and 1971. In 1972-1976 he again was back at SIPRI, and in 1976-77 held a Visiting Fellowship in The Strategic and Defence Studies Centre, Australian National University.
Contents

Introduction 1

The prima facie case for arms limitation: The economics of defence in South-east Asia 2

The factors influencing the level and structure of military forces in the region 7

Threat factors 7
(a) Threats to internal security
(b) Intra-regional disputes and rivalries
(c) The region and the major powers

Non-threat factors 16
(a) The action-reaction mechanism
(b) Military pressures for new and better equipment
(c) Supplier pressures
(d) The oceans

The pattern of weapons acquisition 19

Imports 19
(a) Indonesia
(b) Malaysia
(c) Singapore
(d) Thailand
(e) The Philippines

Local defence production 28
(a) Singapore
(b) Malaysia
(c) Indonesia
(d) Thailand
(e) Philippines

Future weapons acquisition: A speculative forecast 33

Weapons acquisition stimulated by specific pressures 34
Weapons currently under development applicable to the region

Air-to-air missiles
Air-to-ground
Ship-to-ship missiles

Special considerations to new weapon technologies
Constraints on proliferation

A proposal for reducing the likelihood of an excessive and destabilising expansion of military arsenals in South-east Asia

Appendices:

1 Major weapons acquired or on order by ASEAN countries, 1970-77.
2 Introduction of jet combat aircraft by ASEAN countries, 1955-78.
3 Introduction of missile-armed patrol boats by ASEAN countries, 1961-79.
4 Supplier-recipient matrix for major weapons, ASEAN countries, 1970-77.
Introduction

This paper examines the South-east Asia region with the objective of determining the desirability and feasibility of the adoption of measures designed to moderate the expansion of military arsenals. In other words it is broadly concerned with the prospects for regional arms control arrangements.

Arms control, as distinct from disarmament, came into vogue in the late 1950s when the periodic discussions on general and complete disarmament foundered altogether. The judgement was apparently made that the level of armaments was already so high and the momentum of the main East-West arms race so great that frontal attacks on the problem would continue to end in failure. Accordingly the focus of attention switched to the formulation, proposal, and frequently discussion and negotiation of a wide variety of measures with at least one of the following objectives:

1. to reduce the risk of war;
2. to reduce the scale and violence of war should it break out;
3. to reduce the cost of preparations for war.

The proposal advanced in this paper is concerned primarily with the third objective.

The regional approach to arms control has much to recommend it. The various regions of the world differ markedly as regards the state of relations between states in the region, the extent of interest and involvement by external powers, the level and sophistication of armaments and so on. Thus what may seem beyond achievement in Europe or the Middle East may be possible in South America or South-east Asia. It is also the case for the majority of countries that such threats to their security as they perceive emanate primarily from their neighbours in the region.

The analysis in this paper will focus on the five member nations of the Association of South-east Asian Nations (ASEAN) — Thailand, Malaysia, Singapore, Indonesia and the Philippines. Obviously, however, this is just the core of the group of countries that must be involved in any scheme to limit the flow of armaments to the region. No scheme would get off the ground or would long survive if the three states of Indo-China pursued contradictory policies. The co-operation of these states, particularly Vietnam, is essential. The direct participation of the Indo-China states, while desirable, is probably not indispensible, at least for an initial period. It would seem sufficient for these states to sympathise with the objective of controlling and moderating the inflow of armaments and eschew political and military policies that would jeopardize the attainment of this objective. In a similar vein the co-operation of those extra-regional powers capable of deploying military force into the region would be beneficial.
The paper is divided into five sections. The two most important sections are the third which attempts to identify the various forces at work in the region tending to escalate the level of armaments and the last which suggests a scheme to counter some of these forces.

The appendices contain a register of arms acquisition over the period 1970-76 and document known plans for future acquisition. Various other breakdowns of arms imports are also presented.

The prima facie case for arms limitation: The economics of defence in South-east Asia

The case for disarmament or arms control usually centres on the risks of massive destruction and loss of life and the belief that, as an intelligent species, we ought to be able to do better than to conduct our affairs in the shadows of steadily increasing military arsenals. A second obvious justification, and arguably one that should receive greater prominence and more systematic attention than it has, is that disarmament or effective arms control can save large sums of money.

It is probably safe to say that reductions in military expenditure or restricting the rate of growth of this expenditure would be attractive to most governments and to some groups in all governments. This would be particularly true of developing countries since governments in these countries bear a disproportionately large responsibility for economic and social development. To put the matter the other way round, the opportunity cost of diverting government resources to military uses is probably greater in developing than in developed countries. Thus, at least on these grounds, the governments of developing countries should be more inclined to entertain proposals that offer a reasonable prospect of controlling and moderating the rate of growth of military expenditure.

In South-east Asia the pace of military developments has been quite fast. This is borne out by various indicators of the resource cost of the military efforts being made by countries in the region. Between 1965 and 1975 the value of resources devoted to military purposes by the member nations of ASEAN has more than tripled; their combined military expenditure, expressed in constant prices, has increased at an average annual rate of more than 13 per cent (Table 1).

By international standards this is a very fast rate of growth indeed. In fact it is more than four times the average annual rate of growth in total world
military expenditure over the same period. As one would expect, this fast rate of growth has meant a general upward trend in the share of military expenditure in gross domestic product (Table 2). Perhaps of greater significance, as implied earlier, is the consistently large and in most cases growing share of government revenue diverted to the military over the past decade (Table 3).

Despite the evidence that most of the nations of South-east Asia plan or have already committed themselves to further quantitative and qualitative expansion of their arsenals, it seems unlikely — in the absence of conflict or a serious deterioration in inter-state relations — that the rate of growth of military expenditure in real terms experienced over the past decade will be sustained over the next. Even if this is the case the extent to which the average future rate of increase is lower than in the past has a major bearing on the levels of military expenditure that will have to be supported in future years.

In 1976 the combined military expenditures of the ASEAN countries, expressed in constant 1973 prices, was approximately $1.9 billion. If, over the ensuing decade, the average annual rate of increase is 10 per cent the level of expenditure in 1985 will be $4.5 billion (still at 1973 prices). If, on the other hand, the rate of increase can be held to 5 per cent expenditure in 1985 it would be $2.9 billion and at 2 per cent it would be $2.1 billion. In other words any reduction in the rate of growth of military expenditure can yield very large dividends even over a period as short as a decade. Of course, when one is speaking of alternative future rates of increase in the volume of resources devoted to military uses the savings resulting from rates of increase below that actually experienced will be hypothetical. Nevertheless, the experience of the recent past indicates the strong likelihood that, unless conscious efforts are made to restrain military developments, rates of increase in military expenditure will be relatively high rather than relatively low.

Apart from these aggregate indices of the economic cost of military preparations there are a number of other aspects that, although more difficult to quantify, are no less important. Apart from the fact that military budgets are often not comprehensive, an important consideration is that military expenditure often understates the real value of the resources put aside for military purposes. The most obvious example of understatement occurs when a nation employs conscription to secure personnel rather than compete with civilian demand in the labour market. In developing countries, where a significant fraction of the labour force is typically unemployed or semi-employed, the extent to which conscription understates the real economic value of military personnel may seem small or even non-existent. However, to the extent that the military demand for personnel is concentrated on those
who have a higher degree of literacy and skill than the population in general (or the greatest potential to acquire skills) the opportunity cost of conscripted personnel is likely to be higher than the remuneration they receive.

A closely related issue is that as the quantity of equipment per soldier increases and as the complexity and sophistication of that equipment increases the demand for skilled personnel grows sharply. A statistic that gives some indication of the trend in the quantity and quality of equipment is military expenditure per soldier. This data is shown in Table 4. Skilled manpower is normally a particularly scarce resource in developing countries and its diversion into the military thus imposes an important constraint on the civilian economy. It is sometimes claimed that the military can play an important educational role in developing countries but the validity of this argument can be seriously questioned in terms of the relevance of military-related skills in the civilian economy and the fact that skills are acquired in an indirect and thus wasteful manner. In addition, the civilian utility of the skills acquired by short-term conscripts is not likely to be high. The military will only invest substantial resources in training personnel who contract to remain in the services for a long period. Accordingly, their skills will only become available after a long period.

A second resource which is normally scarce in developing countries and on which the military sector makes a disproportionately heavy claim is foreign exchange. In 1975, for example, the combined military expenditure of the ASEAN states, at current prices and exchange rates, was about $2.6 billion. It is not possible to ascertain what fraction of this sum was used to import weapons and equipment. In most countries the procurement of weapons and equipment absorbs between 15 and 30 per cent of total military expenditure. Even the lower fraction would mean that in one year the ASEAN countries lost $390 million in foreign exchange.

Since economic development is often critically dependent on imported machinery and raw materials the allocation of foreign exchange to the purchase of armaments can seriously retard development. If imports to sustain development programs are to a greater extent financed by external borrowing due to the drain on foreign exchange reserves resulting from arms imports, then a further indirect constraint on development arises from additional debt servicing requirements. Even worse is the accumulation of debt to acquire armaments since no income is generated with which to service such debt. And to the extent that resources diverted to the military could have been used to raise the productivity of other investments financed by external borrowing, the debt accumulated for military purposes is not only unproductive, it is counter-productive.
Finally, a more complex issue is the nature and effect of the transfer of technology that takes place via the acquisition and employment of weapons and equipment from advanced countries. The magnitude of this transfer obviously grows as recipient countries endeavour to do more of the maintenance, repair and assembly of imported equipment locally. Indeed the acquisition of new skills is often a conscious motive behind such steps. The question is whether such skills as are acquired are of any value and whether the military mechanism is a cost-effective way of doing it.

As in the civil field very little has been done to design and develop armaments for countries with a narrow industrial base and a low or even non-existent ability to handle modern technology. The manner in which the international trade in arms has evolved has effectively minimised the demand for low-technology, lower-capability armaments. This lack of demand for and the related limited availability of 'unsophisticated' armaments has had and, in the opinion of this writer, will continue to have major economic ramifications for developing countries.

Armaments typically embody the most advanced technology available in the countries that develop and manufacture them. Even in these countries the civilian utility of military technology has proven to be distinctly limited. Thus the acquisition of modern armaments by developing countries could be said to represent the transfer of inappropriate technology in its most extreme form. In endeavouring to master this technology, at whatever level, developing countries have to invest grossly disproportionate shares of available resources many of which are in any case in short supply. Even with this costly investment no militarily significant degree of independence can be hoped for and spin-offs beneficial to the civilian economy must be expected to be relatively small.

This brief discussion may be regarded as belabouring the obvious but the economic benefits of effective arms control have been generally underrated. A proper appreciation of how costly it will be to sustain the established military trends could well prove decisive in mustering the political will necessary to control these trends.
TABLE 1 Military Expenditure in ASEAN Countries, 1965-76
U.S. $m, constant (1973) prices and exchange rates

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>151</td>
<td>104</td>
<td>226</td>
<td>292</td>
<td>339</td>
<td>359</td>
<td>405</td>
<td>456</td>
<td>430</td>
<td>(610)</td>
<td>(645)</td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>155</td>
<td>191</td>
<td>177</td>
<td>184</td>
<td>179</td>
<td>243</td>
<td>273</td>
<td>280</td>
<td>262</td>
<td>262</td>
<td>280</td>
<td>262</td>
</tr>
<tr>
<td>Philippines</td>
<td>65</td>
<td>71</td>
<td>78</td>
<td>89</td>
<td>100</td>
<td>113</td>
<td>105</td>
<td>115</td>
<td>206</td>
<td>256</td>
<td>273</td>
<td>256</td>
</tr>
<tr>
<td>Singapore</td>
<td>—</td>
<td>—</td>
<td>42</td>
<td>64</td>
<td>128</td>
<td>162</td>
<td>206</td>
<td>218</td>
<td>205</td>
<td>197</td>
<td>223</td>
<td>267</td>
</tr>
<tr>
<td>Thailand</td>
<td>124</td>
<td>134</td>
<td>154</td>
<td>185</td>
<td>217</td>
<td>252</td>
<td>298</td>
<td>309</td>
<td>300</td>
<td>289</td>
<td>325</td>
<td>374</td>
</tr>
<tr>
<td>Total</td>
<td>495</td>
<td>500</td>
<td>677</td>
<td>814</td>
<td>963</td>
<td>1129</td>
<td>1287</td>
<td>1368</td>
<td>1421</td>
<td>1614</td>
<td>1845</td>
<td>(1877)</td>
</tr>
</tbody>
</table>

From the above figures, the average annual percentage change for ASEAN countries was 13.2%

Source: *World Armaments and Disarmament, SIPRI Yearbook, 1976 and 1977*

TABLE 2 Military Expenditure as a Percentage of Gross Domestic Product

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>2.2</td>
<td>1.2</td>
<td>2.5</td>
<td>3.0</td>
<td>3.2</td>
<td>3.1</td>
<td>3.2</td>
<td>3.2</td>
<td>2.6</td>
<td>3.6</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Malaysia</td>
<td>4.0</td>
<td>4.8</td>
<td>4.5</td>
<td>4.5</td>
<td>3.8</td>
<td>5.1</td>
<td>5.5</td>
<td>5.2</td>
<td>4.7</td>
<td>4.4</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Philippines</td>
<td>1.1</td>
<td>1.3</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.1</td>
<td>1.3</td>
<td>2.0</td>
<td>2.4</td>
<td>2.5</td>
<td>—</td>
</tr>
<tr>
<td>Singapore</td>
<td>—</td>
<td>—</td>
<td>2.1</td>
<td>2.9</td>
<td>4.9</td>
<td>5.4</td>
<td>5.9</td>
<td>5.8</td>
<td>4.9</td>
<td>4.7</td>
<td>5.0</td>
<td>—</td>
</tr>
<tr>
<td>Thailand</td>
<td>2.3</td>
<td>2.1</td>
<td>2.4</td>
<td>2.7</td>
<td>2.9</td>
<td>3.3</td>
<td>3.7</td>
<td>3.5</td>
<td>2.9</td>
<td>2.7</td>
<td>2.9</td>
<td>—</td>
</tr>
</tbody>
</table>

Source: *World Armaments and Disarmament, SIPRI Yearbook 1976 and 1977*

TABLE 3 Military Expenditure as a Percent of Central Government Revenue

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>57.3</td>
<td>41.8</td>
<td>34.9</td>
<td>33.7</td>
<td>30.2</td>
<td>29.9</td>
<td>24.2</td>
</tr>
<tr>
<td>Malaysia</td>
<td>20.2</td>
<td>22.5</td>
<td>20.3</td>
<td>20.6</td>
<td>—</td>
<td>21.3</td>
<td>24.0</td>
<td>20.2</td>
<td>20.0</td>
<td>16.9</td>
<td>20.9</td>
<td>—</td>
</tr>
<tr>
<td>Philippines</td>
<td>12.0</td>
<td>13.3</td>
<td>12.4</td>
<td>13.5</td>
<td>13.4</td>
<td>14.7</td>
<td>12.6</td>
<td>11.7</td>
<td>11.9</td>
<td>17.7</td>
<td>16.9</td>
<td>15.8</td>
</tr>
<tr>
<td>Singapore</td>
<td>—</td>
<td>—</td>
<td>11.9</td>
<td>15.3</td>
<td>24.2</td>
<td>—</td>
<td>26.3</td>
<td>28.9</td>
<td>25.0</td>
<td>23.6</td>
<td>24.0</td>
<td>26.8</td>
</tr>
<tr>
<td>Thailand</td>
<td>16.9</td>
<td>16.4</td>
<td>16.7</td>
<td>18.3</td>
<td>20.0</td>
<td>22.2</td>
<td>27.2</td>
<td>26.5</td>
<td>23.5</td>
<td>18.7</td>
<td>21.6</td>
<td>22.0</td>
</tr>
</tbody>
</table>

Notes:  
1. Data for Indonesia should be treated with more than the usual caution owing to the chaotic state of government finances and hyper-inflation in the period immediately after 1965.  
2. The gap results from a change in the financial year.
TABLE 4 Military Expenditure Per Soldier, ASEAN Countries, 1965-76
U.S. $, constant 1970 prices

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>308</td>
<td>247</td>
<td>537</td>
<td>720</td>
<td>778</td>
<td>824</td>
<td>1065</td>
<td>1205</td>
<td>1121</td>
<td>(1537)</td>
<td>(1924)</td>
<td>—</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3620</td>
<td>4333</td>
<td>3636</td>
<td>3676</td>
<td>2704</td>
<td>3455</td>
<td>3700</td>
<td>3624</td>
<td>3393</td>
<td>2689</td>
<td>3781</td>
<td>3283</td>
</tr>
<tr>
<td>Philippines</td>
<td>1361</td>
<td>1432</td>
<td>1966</td>
<td>2233</td>
<td>2307</td>
<td>2575</td>
<td>2283</td>
<td>2806</td>
<td>2880</td>
<td>2072</td>
<td>2462</td>
<td>1960</td>
</tr>
<tr>
<td>Singapore</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>13000</td>
<td>8000</td>
<td>5544</td>
<td>6824</td>
<td>8000</td>
<td>7894</td>
<td>6165</td>
<td>5806</td>
<td>5033</td>
</tr>
<tr>
<td>Thailand</td>
<td>794</td>
<td>888</td>
<td>1023</td>
<td>1092</td>
<td>1432</td>
<td>1360</td>
<td>1417</td>
<td>1720</td>
<td>1378</td>
<td>1196</td>
<td>1284</td>
<td>1472</td>
</tr>
</tbody>
</table>

1. This series includes U.S. grant military assistance converted to constant 1970 prices by applying the U.S. consumer price index.

TABLE 5 Military Personnel in ASEAN States, 1965-76
in thousands

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>412</td>
<td>352</td>
<td>352</td>
<td>340</td>
<td>356</td>
<td>365</td>
<td>319</td>
<td>317</td>
<td>322</td>
<td>270</td>
<td>266</td>
<td>246</td>
</tr>
<tr>
<td>Malaysia</td>
<td>29</td>
<td>30</td>
<td>33</td>
<td>34</td>
<td>45</td>
<td>48</td>
<td>50</td>
<td>50</td>
<td>56</td>
<td>50</td>
<td>61</td>
<td>62</td>
</tr>
<tr>
<td>Philippines</td>
<td>36</td>
<td>37</td>
<td>30</td>
<td>30</td>
<td>32</td>
<td>33</td>
<td>35</td>
<td>31</td>
<td>43</td>
<td>55</td>
<td>67</td>
<td>78</td>
</tr>
<tr>
<td>Singapore</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>5</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>21</td>
<td>22</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>Thailand</td>
<td>131</td>
<td>126</td>
<td>126</td>
<td>141</td>
<td>126</td>
<td>154</td>
<td>175</td>
<td>150</td>
<td>180</td>
<td>195</td>
<td>204</td>
<td>210</td>
</tr>
</tbody>
</table>


The factors influencing the level and structure of military forces in the region

A large number of factors influence decisions on the size of a country's armed forces and the weapons and equipment that they will use. In this section I have divided these into threat factors and non-threat factors. The division is somewhat arbitrary — as I shall make explicit at various points — but it is a useful one to make in anticipation of the proposal that will be advanced in the final section.

Threat factors

In a relative sense South-east Asia appears stable and free of tensions. In a ranking of conflict potential most observers would list the Middle East, most
of Africa, South Asia and the North West Pacific above South-east Asia, though not necessarily in that order. Nevertheless the region can hardly be described as tranquil. Armed insurgents are active in most of the countries, there are numerous divisive issues in the region and major re-adjustments are taking place following the termination of the war in Indo-China. All of these bear heavily on the prospects for regional co-operation, particularly in the arms control area.

(a) Threats to internal security

By far the most conspicuous and, at the present time, the most resource-consuming threat faced by the nations of South-east Asia stems from insurgency movements. Although no country is entirely free of such movements, three countries — Thailand, Malaysia and the Philippines — face particularly acute threats to internal security.

Thailand’s principal security concerns are in the north and north east where Communist guerrilla activity has escalated markedly over the past two years. The war-inflated arsenals in Laos, Cambodia and Vietnam, plus Thailand’s major role, both direct and indirect, in the second Indo-China war has made that country acutely aware of the threat of large-scale guerrilla warfare. Initial Thai policy following the success of Communist forces throughout Indo-China was to seek reconciliation. A principal element of this policy was to secure the total withdrawal of American forces, a process completed in June 1976 with the closing down of the U.S. electronic surveillance station at Ramasun. At the same time Thailand undertook to strengthen its own military forces.

The new military-controlled government, while supporting a policy of detente towards its Communist neighbours, has significantly circumscribed the concessions Thailand is willing to make to secure friendly relations. It has, for example, taken steps to ensure continued close relations with the United States although there is little chance that U.S. military personnel will return.1 It has also enlarged the military expansion program by securing authority to borrow up to U.S.$1 billion for the acquisition of weapons and equipment.

Communist guerrillas are also active in Southern Thailand. Although the scale of activity is lower than in the north it has also been escalating. Moreover the problem in this region is compounded by a Muslim secessionist movement and the possibility that Thai and Malayan Communist Party forces may merge and co-ordinate their efforts.2

---

1Two sets of negotiations in the military field were apparently expedited by the new government. One agreement, reached in December 1976, concerned a 15,000 ton stockpile of ammunition left by the U.S. Thailand has purchased the ammunition for U.S.$45 million. Secondly, Thailand and the U.S. agreed, in November 1976, to construct a naval shipyard on the Gulf of Siam near Bangkok. The estimated cost of the project is U.S.$275 million with the U.S. providing much of the machinery and material. It is intended that the shipyard will eventually be capable of constructing missile-armed patrol boats.

2Asia Week, 17 June 1977, pp. 11-14.
Communist insurgency in Malaysia, relatively dormant since the late 1950s, has picked up in recent years to the point where, in 1976 and 1977, it has provoked large-scale operations by security forces.

In the Philippines, the primary internal security problem at the present time is that posed by the Moro National Liberation Front (MNLF), a Muslim separatist movement in the South. The level of violence has escalated considerably in recent years. Late in 1976 the Philippines Defence Secretary estimated MNLF strength at 7,000 and other reports claim that over one half of the Philippines armed forces are engaged in operations against the rebels at a daily cost of some U.S. $270,000. The prospects for a settlement improved somewhat in 1976 when Libya, a primary source of financial and material assistance for the insurgent forces, agreed to act as an intermediary in renewed negotiations. A ceasefire came into effect on 24 December 1976 and remained in force at least through May 1977 while various aspects of the negotiated settlement were implemented. However, controversy over the implementation of the settlement was growing in April — May 1977 and a permanent peace is still far from being a firm prospect.

A second threat to internal security stems from the People’s Liberation Army (PLA), a movement that grew out of the wartime Hukbalahap. There is fairly clear evidence that the PLA has, at various times, received assistance from China, although never on any significant scale. In recent years the PLA has not presented any major problems though isolated incidents still occur. In 1968 some members of the Partido Komunista Philippine formed a new movement, the Communist party of the Philippines (CPP). The CPP also has a military arm, the New People’s Army, which clashes frequently but so far not on a large scale with government forces.

(b) Intra-regional disputes and rivalries

There can be little doubt that stability in South-east Asia over the immediate future will depend very much on how relations develop between the Communist states of Indo-China, particularly Vietnam, and the members of ASEAN. Following the Communist victories in Indo-China the most immediate concern within ASEAN was that regional insurgents might acquire greatly increased fire-power from the enormous stock of small arms and other infantry weapons in Indo-China. As far as can be determined this has not happened. The victories in Indo-China have clearly boosted the morale of regional guerrilla movements and official Vietnamese Statements have done nothing to discourage their efforts. But, apart from small quantities of arms apparently smuggled out of Indo-China, no transfers on any scale or

known to be officially sanctioned have been reported. So long as major stockpiles of surplus infantry weapons and ammunition are known to exist the possibility of their being transferred will continue to be a source of concern but the restraint exercised so far provides some grounds for optimism.

A second source of concern to ASEAN states and potentially a factor that could lead to a major escalation in regional arsenals is Vietnam’s large stock of major weapons. The principal components of this arsenal are nearly 200 jet combat aircraft, some 360 SA-2 medium range surface-to-air missile (SAM) launchers and some SA-9 mobile short-range SAMs, around 900 medium and light tanks and large numbers of self-propelled guns and other artillery units. To what extent these forces have been or could be supplemented by captured U.S. weapons is not clear. The more sophisticated of these, particularly aircraft, are likely to be of little value due to their heavy requirements for spare parts. On the other hand it seems entirely possible that significant numbers of U.S. tanks, armoured personnel carriers and artillery tubes could be maintained in an operational state. Available stocks of spare parts are probably substantial and these could be supplemented by cannibalisation. Moreover the personnel of the former South Vietnamese army would have the appropriate skills.

In any event Vietnam is at the present time by far the strongest military power in South-east Asia with armed forces about as large as the five ASEAN states put together. Although its forces lack long-range striking power — the jet combat aircraft are mostly short-range interceptors, the SA-2 SAM is just barely mobile and there is no navy to speak of — the demonstrated capacity of the Vietnamese forces to deploy and support large and heavily-armed military units over long distances will almost certainly mean that ASEAN states, particularly Thailand, will not discount entirely the possibility of a direct threat from Vietnam.

It follows that one of the more ominous, but fortunately not necessarily the most probable, possible developments is that the region will be split into mutually antagonistic Communist and non-communist camps. If one looks to parallel situations elsewhere in the world, Europe and the Korean peninsula, it can be seen that the cost of such a development would be tragically high; levels of armament would be high on both sides and diplomatic, cultural and economic intercourse would be nil or minimal. Moreover, experience has shown that once a situation of this kind has emerged it is a difficult and agonizingly slow process to bring about any improvement.

According to U.S. Government sources Vietnam, in addition to declining to supply arms to guerrilla movements in Thailand, Malaysia and the Philippines, has also so far denied requests from other countries to buy captured U.S. military equipment. (International Herald Tribune, 2 May 1977, p. 3.)
The primary reason for mentioning this possibility is that for the first time in the post-war period the three Indo-China states are wholly Communist while the rest of South-east Asia (Burma excepted) is more or less strongly anti-communist. There are, however, grounds for assuming that this development is far from inevitable. Firstly, Vietnam appears to be giving first priority to economic reconstruction and development and for this reason will be unwilling to divert major resources to support Communist insurgencies in the ASEAN states. It may also allow normal attrition and wear and tear to diminish existing numbers of major weapons. Nor will it be inclined to forgo the benefits of expanded trade with other South-east Asian nations. Secondly, there is every indication that Vietnam shares with its non-communist neighbours a desire to avoid domination by or excessive dependence on any major power. This common ground may make Vietnam more amenable to regional solutions to problems that minimise the incentive and opportunity for greater involvement by the major powers in the affairs of the region.

The existence of ASEAN is potentially problematic in this context. Although the members of ASEAN have repeatedly denied that the organisation has or intends to develop a military aspect Vietnam remains sceptical, at least at the public level. The new Thai government's apparent attempts, in November and December of 1976 to organise co-operative counterinsurgency measures by ASEAN states appear to have heightened Vietnam's apprehensions that the Association will eventually evolve into a military alliance. Various bilateral agreements between ASEAN states, such as the December 1976 agreement between Indonesia and Malaysia to co-operate in the production of small arms and the agreement between Singapore and the Philippines to allow Singaporean armed forces to train on a Philippines island, undoubtedly contribute to Vietnamese perceptions. A clear priority for ASEAN diplomacy is to prevent these various military links between ASEAN states from contributing to a polarization of the region.

In comparison with future relations with Indo-China other bones of contention within the region appear insignificant but a few issues can be mentioned.

A little more than a decade ago Indonesia pursued a policy of violent confrontation against the newly-created Federation of Malaysia. Since that time, however, and partly, no doubt, in compensation for the foreign policy excesses under Sukarno, Indonesia has fostered close, friendly relations with its neighbours, particularly Malaysia. The success of this effort is reflected in such things as joint operations against insurgents in Kalimantan, a joint proposal on the future status of the Malacca Straits and, as just mentioned, the announced intention to collaborate in the production of small arms. No contentious issues of any significance currently threaten the continuation of good relations between these two states.
Singapore maintains proper, if not close, relations with Malaysia and Indonesia. As a dynamic financial and industrial community Singapore is extremely valuable to South-east Asia as a whole although on the other hand its prosperity is a source of considerable envy. Being small and geographically vulnerable, Singapore is seemingly conscious of the risk of being over-shadowed politically by its neighbours. This is presumably one reason for Singapore's open advocacy of allowing all the major powers equal access to South-east Asia. In Singapore's view regional stability, at least over the medium term, is better served by the countervailing presence of two or more major powers than by promotion of the concept of a zone of peace, freedom and neutrality for South-east Asia.

Similarly, Singapore has been less than enthusiastic about the Malaysian-Indonesian proposal concerning the international status of the Straits of Malacca. These two countries have insisted on recognition of the 'principle of innocent passage' as opposed to the unrestricted notion of freedom of navigation. In accordance with the principle of innocent passage Malaysia and Indonesia would reserve the right to stop and search any vessel passing through the Straits. They have also announced their intention to acquire the capabilities necessary to enforce this principle. For Singapore any major diminution of traffic through the Straits of Malacca would impact heavily on her economy and would generally undermine her ambition to remain the focus of trade and finance in South-east Asia.

In the present context the most important aspect of relations between Malaysia and Thailand is the issue of insurgents operating in Malaysia from bases in southern Thailand. The two countries reached an agreement in 1970 to regulate and co-ordinate counter-insurgency operations. One aspect of this agreement was the so-called 'hot pursuit' arrangement permitting Malaysian forces to penetrate up to 18 kilometres into Thai territory in counter-insurgency operations. Another, of more recent origin, was the stationing of a unit of Malaysia's para-military Police Field Force in Betong in southern Thailand.

However, co-operation in this area has been less than smooth. Malaysian officials have frequently complained of the luke-warm Thai attitude to counter-insurgency operations in the South and have alleged that the Thais tacitly acquiesce in the presence of the insurgents since they direct their operations against Malaysia. The issue is further complicated by the fact that the population in the four southern-most Thai provinces is predominantly Muslim (around 80 per cent) and radical Malaysian politicians have alleged that these people are neglected and discriminated against. Thailand, in turn, is concerned about the support that Thai Muslim rebels receive from Malay Muslims in the northern states of Malaysia.
In May 1976 the Thai government requested that the 'hot pursuit' arrangement be discontinued and that the Police Field Force be withdrawn from Betong.\(^5\) This move followed rallies in Betong, which the Malaysian government felt were Communist-inspired, protesting property damage and violation of individual rights by Malaysian forces operating in Thailand.\(^6\) Another reason given for the Thai action was the Malaysian government’s refusal to agree to reciprocal ‘hot pursuit’ arrangements for Thai forces operating against Thai Muslim separatists in the border region.\(^7\)

The new Thai government, following the coup on 6 October 1976, reopened negotiations with Malaysia to achieve an effective arrangement for joint operations against Communist insurgents in the border area and a new arrangement was reached on 4 March, 1977. During the negotiations Thailand indicated that it would not seek Malaysia’s assistance in suppressing its own Muslim dissidents.\(^8\) At the same time, however, it emphasised that the Muslim issue in southern Thailand was a domestic concern, a statement presumably intended to indicate that Malaysia should take steps to prevent Malay Muslims from providing assistance in any form. Given the complex nature of this situation, with operations against Communist insurgents intertwined with religious and territorial issues, it might be regarded as potentially explosive.

(c) The region and the major powers
The possibility of a direct military threat from a major power against one or more states in South-east Asia is extremely remote but an active competition for influence in the region could readily exacerbate tensions and thus indirectly influence the demand for armaments. The involvement in, attitudes towards and ambitions for South-east Asia of the major powers is a large extent on major power attitudes towards and ambitions for South-east Asia. The extent and nature of current involvement and a brief survey of expert thinking on major power attitudes towards and ambitions for South-east Asia.

American involvement in the region, although enormously reduced in recent years, remains substantial. The most conspicuous manifestations of this are the Clark Air Force and Subic Bay naval bases in the Philippines. As a result of domestic pressures and presumably to present an image more consistent with the realities of post-Vietnam South-east Asia, the Philippines

\(^5\)The withdrawal was effected in June.

\(^6\)Earlier, in December 1975, Thai and Malaysian forces had been put on full alert following a threat by the insurgents to attack Betong unless the Malaysian forces were withdrawn.

\(^7\)Sydney Morning Herald, 8 June, 1976.

\(^8\)Dept. of Foreign Affairs Backgrounder, No. 65, pp. 3-5.
government has insisted that the base agreements be renegotiated. These negotiations, extending over the period April — December 1976, were suspended amid some confusion and controversy with the Philippines rejecting a U.S. proposal for approximately $1,000 million in military and economic aid over five years in return for base rights. Negotiations will be opened with the Carter administration. It has already been agreed, however, that exclusive U.S. jurisdiction over the bases will be terminated.

Total U.S. withdrawal from the Philippines, while most unlikely, would undoubtedly strengthen the case for more armaments both in the Philippines and elsewhere in the region. At the present time it seems that a likely course of action is that the U.S. will consolidate its operations at Subic Bay leaving the future of the 130,000-acre Clark Air Force Base up to the Philippines government.

Further evidence of U.S. interest in the region is provided by the fact that the U.S.A. is now a major arms supplier to all five ASEAN states. In the case of Thailand, the Philippines and, to a lesser extent, Indonesia this has been true for 20 years or more; major supplies to Malaysia and Singapore are much more recent.

The strategic importance of the region requires little emphasis: the volume of commercial seaborne traffic to, from and through South-east Asian waters is extremely large and for some nations, notably Japan, any significant interruption of this traffic would have major ramifications. From the military standpoint the importance of the region is underlined by the declared intention on the part of the U.S.A. to deploy periodically naval task forces to the Indian Ocean from bases in the Pacific. Indonesia is obviously the key country in this regard and the U.S.A. has, with caution but determination, sought to improve and strengthen relations with this country.

Soviet naval traffic through South-east Asian waters is probably even heavier than that of the U.S.A. Certainly it is more regular owing to the interchange of naval units between the European fleets and the Pacific fleet. For this reason the Soviet Union can be presumed to be as anxious as the United States to prevent any significant restrictions on transit rights. Like the U.S.A. the Soviet Union has sought to improve its relations with Indonesia. Another consideration suggesting a considerable interest in South-east Asia is that the Soviet Union, having played a major supporting role in the Communist victory in Indo-China, will systematically explore the opportunities for achieving a return on its investment. One example of this may be the reports that the Soviet Union is seeking naval facilities in Vietnam.

9Apart from the more obvious utility of the two main bases the loss of the electronic surveillance station at Ramasun in Thailand has added considerable value to the communications base at San Miguel in the Philippines for the gathering of electronic intelligence from the Asian mainland.
At the broader level there is virtual unanimity among observers that China and the Soviet Union are engaged in an aggressive competition for influence in South-east Asia. There is also a widespread conviction that this rivalry, significantly intensified since the Communist victories in Indo-China, will be a key determinant of developments in the region over the foreseeable future.

While, in a geographic sense, China might be regarded as having a more natural interest in developments in South-east Asia, the region can hardly be regarded as vital to either power. The explanation for the high level of interest displayed and initiatives taken in South-east Asia probably lies in the mutual perception that each power is determined to seek gains at the expense of the other. In other words it is a competition to secure a relative advantage in the degree of influence.1

The Soviet Union has long been genuinely concerned about the expansion of China's power and influence and it has consistently pursued policies designed to frustrate or minimise any such expansion. In South-east Asia the immediate and specific Soviet objective is to contain China although this policy dovetails neatly into the wider competition with the United States for world influence.

There is every indication that China shares this interpretation of Soviet objectives. Certainly China has shown extreme sensitivity to Soviet activities in South-east Asia, regarding them as having the long term objectives of encirclement and isolation from what China considers its rightful sphere of influence. For example the Soviet proposal for an Asian collective security scheme has been violently condemned by China while at the same time it has given modest support to regional initiatives such as ASEAN. China has also counter-attacked in an indirect way by vigorously supporting the rights of coastal states to determine the laws governing shipping activity in their territorial waters. Presumably China hopes in this way to reduce the ability of the Soviet navy to further Soviet foreign policy objectives.

Most observers also feel that China supports a continued U.S. presence in South-east Asia to prevent the Soviet Union from having a free-hand and to relieve China, at least for the time being, of the obligation to take more concrete steps to protect its interests against Soviet incursions.

For South-east Asian nations the overlapping interests of these three major powers present a considerable policy dilemma. This dilemma is compounded by the rapid and complete success of Communist forces in the three states of Indo-China and the accompanying U.S. withdrawal, a development which followed more or less on the heels of the British withdrawal.

Broadly speaking the non-communist states of South-east Asia appear to have accepted that China is the key to their future security although it can be expected that every state will endeavour to project an image of even-handedness in relations with the major powers. The degree of moral and material support provided by China directly determines the scale of insurgent operations in Thailand, Malaysia and Burma. China is also judged to be the country most capable of effectively influencing the foreign policies adopted by the Indo-China states, especially Vietnam, towards the rest of South-east Asia.

This knowledge, however, still leaves problems of tactics. China remains committed to the support of revolutionary factions, particularly since the U.S.S.R. and now possibly Vietnam stand ready to take its place. Moreover, Malaysia, Singapore and Indonesia all have substantial Chinese populations and are sensitive to the subversive potential of these groups if formal diplomatic relations are established (resumed in Indonesia's case) with China. China has issued statements that all 'overseas Chinese' should regard themselves as citizens of the countries in which they reside but the uncertainty persists.

Malaysia, with 40 per cent of its population made up of Chinese and with Communist guerrillas still active has come down in favour of establishing formal relations with China. Singapore and Indonesia have stated publicly that they will refrain from such a move for as long as is practicable. In Thailand the civilian government in power at the time of the Communist victories in Indo-China attempted immediately to establish cordial relations with the new governments and with China. To date this policy has had little effect on reducing the severity of Thailand's internal security problems. Guerrilla activity in the north-east, which escalated markedly during the Vietnam war, remains high as do tensions along the border with Laos and Cambodia. The hard-line anti-communist stance taken by the new military-backed government, partly no doubt in reaction to the apparent failure of the earlier policy, has visibly exacerbated the situation.

Non-threat factors

(a) The action-reaction mechanism
The action-reaction mechanism is one of the fundamental explanations of how an arms race is run. It describes a situation in which two or more states are mutually responsive to quantitative or qualitative changes in their military arsenals. If these states are enemies or at least highly suspicious of one another reaction times are likely to be short and the chances of over-reaction considerable. It seems indisputable, however, that the action-reaction process will operate even where relations between neighbouring states are good. The inescapable prudence of military planners, the propensity, in view of the high
stakes, to assume the worst will mean that there will be pressures to generally match or offset changes in the military arsenals of neighbouring states. These pressures will be more or less urgent depending on the circumstances but they will never be absent.

The introduction of supersonic, high-altitude interceptors by country A will mean that country B will perceive a need for the same and/or long-range surface-to-air missiles. Low-level penetration aircraft require fast-reacting low level surface-to-air missiles, submarines require an ASW capability and so on.

This general phenomenon is supplemented by such considerations as morale, prestige and respectability. The morale of a nation’s armed forces is likely to suffer if it is felt that the weapons and equipment operated are obsolescent or in poor repair. The criteria used is likely to be the state of the arsenals in neighbouring countries. Similarly, most nations consider that their armed forces make an important contribution to the total image of the nation in the international community and all the evidence suggests that this is a valid judgement. Finally, one can point to the institutional dignity of the armed forces as a factor promoting the acquisition of weaponry at least as up-to-date and varied in capability as that available elsewhere in the neighbourhood.

(b) Military pressures for new and better equipment
In the previous paragraph several sources of military pressure for new and better equipment were identified. A separate heading was considered appropriate for another source of pressure from the military — the desire to keep abreast of military technology. With military technology changing rapidly a strong case can be made for the necessity to continuously monitor developments in weaponry and equipment and periodically to purchase items incorporating new technologies. Unless this is done, it is argued, a nation’s armed forces can become dangerously out of touch. An inability to evaluate currently available weaponry sensibly would be a serious deficiency in the event of crises which necessitated a rapid expansion in military capability.

(c) Supplier pressures
While it cannot be claimed that non-arms producing nations are coerced into acquiring weapons it is also the case that the arms suppliers actively promote the sale of their products. At the present time the international market for armaments is fiercely competitive. Suppliers are rarely inclined to question the necessity of the weaponry ordered by a client or to offer counsel on the likely ramifications of the acquisition of particular weapons. In regions where military arsenals are still comparatively small and narrow in the range of capabilities available the multiple potential sources of supply, the capacity to fulfil orders quickly and, if requested, in secrecy can considerably exacerbate the other forces at work tending to increase and diversify the arsenals.
(d) The oceans

A prospective development with direct and potentially very significant military implications is the adoption of 200-mile maritime economic zones. The anticipation of this fundamental change in the existing regime governing the use of the oceans has already provoked a major demand from coastal states for naval vessels to establish and enforce sovereignty over such zones.

Most observers see great potential for conflict in the rapidly developing means to exploit systematically the resources in and under the oceans. It is significant that the South China Sea is one of several ocean areas around the world with a high assessed potential for oil and natural gas. It is also significant that the first forceful acquisition of territory primarily motivated by the prospect of oil deposits on the continental shelf of that territory occurred in 1974 when Chinese forces ousted a South Vietnamese military garrison from the Paracel Islands in the South China Sea. The Spratley Island Group, 200 miles further south, are claimed by the Philippines, Vietnam, Taiwan and China. Indeed, the former three countries have stationed military personnel on separate islands in the group. In May 1976 Philippines military aircraft were reportedly fired upon by Vietnamese batteries.

In South-east Asia the question of a new international regime on the use of the oceans and the exploitation of ocean resources is especially complex because of the strategic importance of the various straits in the region and because Indonesia and the Philippines, for obvious reasons, subscribe to the archipelagic concept. Singapore, for example, regards the latter as inequitable since, when combined with the exclusive maritime economic zone concept archipelagic states would acquire huge seabed allocations. In addition Singaporean fishermen have traditionally operated in waters that would come under Indonesian jurisdiction if the archipelagic concept was approved under international law. Malaysia, although it accepts the archipelagic concept, also has reservations in that Indonesia’s Natuna Islands lie on a direct path between East and West Malaysia.

The protection of vastly increased ocean areas is thus a readily identifiable pressure for expanded naval forces particularly as various issues are likely to remain in dispute for some time to come. The next section, which reviews the pattern of arms acquisition by ASEAN countries in recent years, provides clear evidence of this pressure.

Also noteworthy are reports that Vietnam has been negotiating with the U.S.S.R. for assistance in expanding its naval forces. Similarly, in 1977, the

---

12 United States Naval Institute Proceedings, August 1976, p. 106.
Vietnamese navy's first publicised manoeuvres were accompanied by calls for a naval expansion.\textsuperscript{13}

Although we have elected to distinguish between threat and non-threat pressures tending to escalate the level of armaments, an increase in levels of armament will tend to exacerbate existing regional suspicions irrespective of the motive behind the increase. In addition an escalation in the level of armaments can only too readily generate suspicions between friendly states.

The pattern of weapons acquisition

This section reviews arms imports and local defence production in South-east Asian countries over the past decade. The selection of a ten-year time span is not entirely arbitrary. Firstly, it permits a discussion of the origin of virtually all the major weapons currently operational in the region. Secondly, 1965/66 marked the beginning of a new era with on the one hand the termination of both Indonesian confrontation with Malaysia and of the supplier-recipient relationship between Indonesia and the Soviet Union and on the other the dramatic escalation of the conflict in Vietnam.

Arms imports and defence production will be discussed separately, although this necessitates some repetition of information.

Imports

(a) Indonesia

The abortive air force coup in October 1965 and the subsequent army takeover and suppression of the Indonesian Communist Party led to the termination of arms supplies from the Soviet Union. Similarly, negotiations for the supply of arms from China, which reached an advanced stage in 1964-65, were suspended and the Indonesian ambassador to China recalled. Indonesia's economic situation was desperate ruling out any further arms purchases and no major power was interested in providing military assistance on any significant scale. In any event the new army regime was primarily concerned with restoring good relations with Indonesia's neighbours and would probably not have accepted any offer for large-scale military assistance.

The abrupt termination of supplies from the Soviet Union was of no immediate consequence to Indonesia's requirements for a defensive capability.

\textsuperscript{13} Far Eastern Economic Review, 17 June 1977, p. 5.
Acquisitions from the Soviet Union, Poland and Czechoslovakia over the period 1958-65 had produced an over-abundance of major weapons including some 140 jet combat aircraft and over 100 naval vessels of all kinds. By utilizing existing stocks of spare parts14 and cannibalising surplus units adequate number of aircraft, ships and land vehicles could be kept operational. 

For several years there was an almost complete hiatus in major weapon acquisitions. The only exception was the purchase of a small number of ENTAC anti-tank missiles from France in 1968. In April 1967 a military assistance agreement was concluded with the United States but, through 1970, the annual amounts were small and no combat equipment was provided.15

Two reasons for this low-key resumption of U.S. military assistance can be mentioned. Firstly, U.S.-Indonesian relations had been severely strained over the issues of West Irian and confrontation with Malaysia, although the U.S.A. always stopped short of breaking relations altogether. Secondly, excessive US enthusiasm in the early 1950s in making Indonesia a recipient of military assistance plus the Congressional insistence at the time that all recipients of military aid issue public statements to the effect that Communism was the common enemy provoked a government crisis in Indonesia and was a factor in Indonesia's subsequent acceptance of assistance from the Soviet Union. This history and the probable reluctance of the Indonesian government to switch abruptly from dependence on one superpower to dependence on the other produced mutual caution.

Over time the question of replacing the Soviet-supplied equipment became increasingly urgent. In what appears to have been an interim step, Indonesia accepted an offer for increased military assistance from the U.S.A. In 1971 the value of U.S. military assistance jumped to $33.3 million and a further $98.4 million was provided in the ensuing five years. This assistance was supplemented by surplus military equipment with an acquisition value of $30 million. The major weapons in this assistance program, delivered over the period 1970-75, included frigates (4), tank landing ships (3), minesweepers (6), T-33 jet trainers (16), and S-55 helicopters (10). An order placed in 1974 for 16 A-7 Corsair II strike aircraft was subsequently cancelled.

In addition Indonesia accepted a $A30 million military assistance package from Australia which covered a squadron of Avon Sabre jet fighters, 6 Nomad light transport aircraft (4 of which were configured for maritime surveillance) and some patrol boats.

With this equipment in hand Indonesia plans further acquisitions on a commercial basis. It is also apparent that an attempt is being made to avoid

14 A Soviet offer to supply spare parts on a cash basis was never taken up.

15 1967, $2.5m; 1968, $4.7m; 1969, $5.1m; 1970, $6.3m.
excessive dependence on any one supplier. Under the U.S. Foreign Military Sales (FMS) program for fiscal year 1975 Indonesia placed orders worth $48.5 million contrasting with purchases of $200,000 or less in earlier years. Apart from 16 OV-10F Bronco COIN aircraft (worth about $10 million) it is not yet clear what items were ordered, but a new jet combat aircraft is a distinct possibility. Indonesia has also placed orders in the Netherlands for missile-armed frigates and Fokker F-27 transport aircraft; in Spain for the CASA-212 STOL light transport; and in South Korea for missile-armed patrol boats.

(b) Malaysia
A logical starting date for a discussion of Malaysia’s arms imports is 1967 with Britain’s announcement of its intention to withdraw from East of Suez. Although the Federation of Malaysia was formed in September 1963 and immediately faced a security threat from Indonesia the pressure to acquire armaments was much reduced by the presence of a large number of servicemen from the U.K., Australia and New Zealand with major weapons such as combat aircraft and naval vessels.

In 1967 the Malaysian armed forces were equipped almost exclusively with British arms, the exceptions being French helicopters and Canadian transport aircraft. At that time Malaysia had no fighter aircraft and, as a consequence of the announcement of Britain’s withdrawal from the area, steps were taken to acquire such aircraft. Proposals from the UK for refurbished Hawker Hunters and, later, Lightning interceptors were rejected. The French Mirage III was also considered but no deal was concluded. It appears that during this period the U.S.A. was putting pressure on Britain not to sell Malaysia a sophisticated aircraft with the argument that such a deal could spark off a competitive arms race in the region, particularly with the Philippines. It is possible that similar pressure was put on the French.

As an interim measure Malaysia accepted 10 obsolescent Sabre jet fighters from Australia in 1969. The urgency of the question was presumably reduced by Britain’s modification of its timetable for withdrawal and because Australia stationed two squadron’s of Mirage IIIIs in Malaysia. The question of the purchase of a fighter aircraft appears to have re-emerged in 1970/71. The Sabres provided by Australia had an estimated remaining service life of about six years so that, given that the need for a fighter was established and to allow for lead-time in delivery, a decision had to be made.

The French Mirage was again considered and in June 1971 an order was placed for 10-12 of the Mirage V ground-attack variant. For reasons that,

17 SIPRI Yearbook 1972, p. 131. The Military Balance 1971/72 I.I.S.S. London 1972, p. 49 also states that the Mirage was ordered but in the Mirage III fighter variant.
as far as can be determined, were not made public the Mirage order was
cancelled and in July of the following year a firm order was placed for the U.S.
F-5E Tiger II light fighter and Sidewinder air-to-air missile.

Prior to the F-5E deal, worth some $35 million, the U.S.A. had pursued a
cautious policy with respect to military aid and sales to Malaysia. A small
military assistance program, limited to training was started in 1966 and
sustained through to 1975. Credit for military purchases from the U.S.A. was
first provided in 1966. The amount was small, $4 million, but the terms
generous — repayment over 10 years at 3 per cent. A further credit for $11.6
million was extended in 1967 and a total of $59.3 million over the years
1971-76. Among other things these funds were used to buy V-100 Commando
armoured cars and presumably helped to finance the purchase of six C-130H
Hercules transports ordered in October 1974. The latter deal was reportedly
worth $47 million.

An important factor in the caution shown by the U.S.A. towards arms sup­
plies to Malaysia was probably the former's close relations with the Philippines.
Relations between the Philippines and Malaysia were periodically strained
during the latter half of the 1960s over the Sabah issue and over evidence that
Muslim rebels in the southern Philippines were being supplied with arms from
Libya via Sabah. U.S. unwillingness to antagonise the Philippines during this
period was strengthened by the utility of its military bases in that country for
the conduct of operations in Vietnam.

Despite losing the fighter contract France strengthened its position as a
major arms supplier to Malaysia during the period of expansion in anticipa­
tion of Britain's withdrawal. Apart from the Allouette III helicopter first
ordered in 1962 and re-ordered repeatedly since, France secured important
contracts from the Malaysian Navy. Around 1970 Malaysia opted to fit four
patrol boats acquired from the UK in 1967 with the French SS-12 short
range surface-to-surface missile. In the same year four 'La Combattante II'-class
patrol boats were ordered, each equipped with two launchers for the 38 kilo­
metre range Exocet anti-shipping missile. Early in 1976 plans were apparently
finalised to order an additional four of these vessels with four Exocet launchers
per vessel. However, in a controversial decision, the contract for the hulls and
most of the electronic equipment went to Sweden (for modified Spica II-class
vessels) although the Exocet missile will still be the main armament.18 There
are also reports that six missile-armed patrol boats are being built under licence
from West Germany and that these units will be armed with Israel's Gabriel
missile.19

18Far Eastern Economic Review, 10 September 1976, pp. 41-43; 24 September 1976,
pp. 10-11.
19Jane's All the World's Fighting Ships, 1976-77, London, p. 316 and SIPRI Yearbook,
The inroads made by the United States and France have, of course, adversely affected the U.K.'s share of the market for arms in Malaysia. The last big British deal was for a 1250-ton frigate equipped with Seacat surface-to-air missile delivered in 1971. Other U.K. sales in recent years include armoured cars and Bulldog primary trainer aircraft.

(c) Singapore

In 1965, when Singapore left the Federation of Malaysia and became an independent Republic a number of countries were approached for advice and assistance in establishing the armed forces. Only Israel responded to these overtures. The Israeli advisors, the last of whom left in May 1974, witnessed a rapid increase in the size and quality of the Singaporean armed forces.

Apart from the rapid growth inherent in starting from scratch Britain's announcement, in 1967, of its intention to withdraw from East of Suez provided an additional stimulus. Owing to the concentration of Britain's forces in the Far East in Singapore the republic inherited a lavish stock of defence and defence-related infrastructure, particularly naval and air force facilities. Moreover, the U.K. provided a $115 million aid fund to cushion the effects of its withdrawal and stipulated that up to one-half could be used to build up the armed forces. Accordingly, Singapore's initial acquisitions of major weapons were made primarily from the U.K.

In 1968 a spate of orders were placed for major weapons for all three services. For the air force orders were placed for 16 BAC 167 Strikemaster light attack aircraft and 20 re-furbished Hawker Hunters. The cost of these aircraft was met, wholly or partly, by the U.K. Six 100-ton fast patrol boats were ordered for the navy with the full cost, approximately $10 million, being met by the U.K. And for the army 80 French-built AMX-13 light tanks were acquired from Israel plus French Allouette III helicopters and a small number of British and American armoured cars.

In the following year, 1969, Singapore opted to take over the Bloodhound long-range surface-to-air missile deployed in the Republic by the RAF. In a deal worth $24 million the missiles were returned to the U.K. for refurbishing and modification and became operational again in Singapore early in 1972. The lack of suitably trained personnel in Singapore meant that, for the first two years, maintenance and technical support had to be provided by B.A.C. technicians. Australian personnel were also involved in this task.

Also in 1969 an order was placed with the West German firm Lürssen Werft for two 234-ton fast patrol boats and a licence acquired for the construction of additional units in Singapore. In 1972, when the first boat was delivered from Germany, the Israeli Gabriel anti-shipping missile was ordered to provide the main armament for these units. By 1976 a total of six of these boats were operational each with five launchers for the Gabriel missile. It is not
known whether Singapore has the 20-kilometre range Gabriel I or the 36-kilometre range Gabriel II.

Expansion of the air force continued with the acquisition of 16 SF-260X trainer/COIN aircraft from Italy in 1971 and an order for 27 additional refurbished Hawker Hunters in the same year. In 1972 40 surplus A-4B Skyhawks were purchased from the U.S.A. The first eight of these aircraft were refurbished and thoroughly modernised by Lockheed Aircraft Services (L.A.S.) in the U.S.A. and the remainder by the L.A.S. subsidiary in Singapore. According to *Janes All the World's Aircraft* the remodelled Skyhawks, designated A-4S, are comparable in performance to current generation versions of this aircraft, for example, the A-4M currently in production for the U.S. Marine Corps and Kuwait.

The Skyhawk purchase was the first large weapons deal with the U.S.A. Singapore has not received any military assistance from the U.S.A. and credits under the U.S. Foreign Military Sales program have been limited to $20.9 million, $19 million of which was extended in 1968 and 1969. As far as can be determined these funds were used to finance, albeit partly, the steady acquisition of V-200 Commando armoured cars and M-113 armoured personnel carriers. *The Military Balance 1976-77* credits Singapore with a total of 500 of these vehicles. Other minor acquisitions from the U.S.A. at least in the financial sense, include two ex-U.S.N. minesweepers purchased in 1975 and six 1653-ton LSTs (Landing Ship-Tank).

In 1976 Singapore abandoned plans to acquire the F-4 Phantom and contracted for 21 F-5E/F Tiger II aircraft with Sidewinder air-to-air missiles in a deal worth $118 million. These aircraft are presumably intended to supplement and eventually replace the refurbished Hunters the first of which were delivered in 1970 and had an estimated service life of 10 years.

(d) Thailand

Since 1950 Thailand has been entirely dependent on the U.S.A. for arms supplies and has consistently received large allocations of grant military assistance. Indeed, for the period 1950-75, the value of U.S. grant military assistance amounted to nearly one-half of Thailand's cumulative indigenous military expenditure.

During the 1950s Thailand figured prominently in the U.S. policy of 'containing' the spread of Communism, a policy which broadly coincided with Thailand's concern about its neighbours. In 1950 Thailand signed an agreement with the U.S.A. under the Mutual Defense Assistance Program and began to receive substantial quantities of arms, particularly aircraft. Thailand also agreed to participate in the Korean War.

There are reports that Singapore has acquired a small number of U.S. M-60 main battle tanks but this seems unlikely.
Thailand's main objective, to secure a firm U.S. commitment to its defence, was achieved in 1954 with the creation of the South East Asian Treaty Organization (SEATO). The commitments under SEATO were subsequently strengthened, primarily in response to the crisis in Laos in 1960-62, by a U.S. promise to support Thailand individually as well as collectively under SEATO. Under these various commitments a continuous strengthening of the Thai armed forces took place with an increasing emphasis on counter insurgency warfare rather than a direct external threat.

During the period of primary interest to this study, generally the years from 1965 onwards, the size and character of U.S. arms supplies to Thailand cannot be separated from Thai participation in the war in Laos and Vietnam. Due to their proximity to the fighting zones bases in Thailand, particularly air force bases, rapidly assumed a major role in U.S. operations in Indo-China. By 1968 U.S. personnel in Thailand numbered 45,000, primarily concerned with the bombing of Vietnam using B-52s, F-4s and, later, F-111s. In addition Thailand sent troops to Vietnam.

During this period U.S. military assistance was substantially increased from $50 million in 1966 to an average of $93 million annually over the years 1967-72. This increase can probably be directly related to Thailand’s contribution to the war in Vietnam and to the legitimate Thai concern that its direct and indirect involvement could bring about retaliation. During the latter half of the 1960s Thailand received the F-5A light fighter, Hawk medium-range surface-to-air missiles and substantial numbers of helicopters, infantry vehicles and small arms.

A number of developments in the late 1960s and early 1970s combined to sustain both the Thai demand for armaments and the U.S. inclination to supply them. Firstly, during the U.S. Presidential campaign in 1968, it became apparent that the U.S.A. would endeavour to disengage from Vietnam. Secondly in July 1969 President Nixon enunciated the so-called Guam Doctrine, the principal message of which was that the U.S.A. would insist on greater self-reliance on the part of its allies. Initially, it was anticipated that the implementation of this doctrine would involve larger allocations of military assistance but increasingly effective Congressional opposition to grant military assistance necessitated an accelerated transition to cash and credit sales of weapons and equipment.21

21 In 1975 Congress stipulated that grant military assistance would be phased out entirely by FY 1977.
All of these influences are reflected in Thailand's arms acquisitions during the 1970s. Grant military aid peaked at $130.1 million in 1972 and then declined sharply to a proposed $1 million in 1977. Arms deliveries continued to be oriented towards counter-insurgency, notably helicopters and OV-10 Bronco, A-37 Dragonfly and AU-23A Peacemaker fixed-wing aircraft. A noticeable exception was an order in 1976 for 16 F-5E light fighters with Sidewinder air-to-air missiles.

Thailand first purchased military equipment from the U.S.A. in 1969 and through 1975 had placed orders valued at $75.6 million. Two 900-ton frigates ordered in 1969 were provided on a cost-sharing basis with military assistance covering 40 per cent of the cost. Credit under the FMS programme was first extended in 1975 ($8.0 million) and a further $36.7 million was proposed for 1976.

In the immediate future Thailand will obviously remain heavily dependent on the U.S.A. to support its existing arsenal. Moreover, the new Thai government, following the coup in October 1976, has expressed its intention of re-establishing close relations, including military relations, with the U.S.A. As indicated earlier it is most unlikely that this will involve the re-introduction of U.S. forces although the U.S.A. regarded the electronic surveillance station at Ramasun as extremely valuable and this facility has reportedly been left in a state that would permit easy reactivation. It is likely however the U.S.A. will receive the bulk of Thai orders for new armaments in the immediate future and reports that the government has been authorized to borrow up to $1,000 million for this purpose indicates the size of the potential market.

Nevertheless, it is worth pointing out that since Thailand began paying for its armaments the first breaks in the virtually absolute U.S. monopoly have occurred. In August 1969 Thailand placed at $16.5 million order in the U.K. for a 1950-ton frigate armed with Seacat surface-to-air missiles, a move that provoked some criticism in the United States. Since then minor purchases have been made of light COIN (counter-insurgency) aircraft and primary trainers from Italy and New Zealand respectively. A more significant order, placed in June 1973, was for three missile-armed patrol boats built in Singapore under licence from Lürssen Werft, Federal Republic of Germany. There are unconfirmed reports of a fourth unit being on order. The missiles on these

---

22The implication of the Guam Doctrine that U.S. forces in foreign countries would be reduced was reinforced in Thailand by domestic pressures. In 1974 the Thai government requested the total withdrawal of the U.S. military personnel. This was accomplished in August 1976 when the electronic surveillance station at Ramasum was shut-down and the remaining 270-odd U.S. personnel withdrawn.

23International Herald Tribune, 10 November 1976.

24Ibid.
vessels have not been confirmed. Most reports suggest the Israeli Gabriel but one source suggests a U.S. radar-homing weapon, probably the Harpoon. In 1976 three more missile-armed patrol boats were ordered, this time from Italy although the missiles will be French (Exocet).

(e) The Philippines

As with Thailand virtually 100 per cent of the arms acquired by the Philippines over the post-war period have been from the U.S.A. However, as an archipelagic state well removed from the Asian mainland and never having been subject to any well defined external threat, the priority accorded to the Philippines in the U.S. military assistance programs has been consistently lower than the states on the mainland. Moreover, in addition to the mutual defence commitments under SEATO, of which the Philippines was a founder member, the U.S.A. has stated on at least two occasions that an attack on the Philippines would 'involve an attack against United States forces stationed there and against the United States and would be instantly repelled'.

Apart from being a former U.S. colony and a country in which the U.S.A. has substantial economic interests, U.S. military interest in the Philippines mainly arises from the military bases it has there, principally the Clark Air Force base and the naval base at Subic Bay. Over the period 1958-76 U.S. military assistance to the Philippines averaged about $23 million a year with comparatively minor peaks and troughs. This assistance is probably best understood as a rental for the base facilities.

The U.S. perception that there was no great need to build up the Philippines armed forces was apparently shared by successive Philippines governments. Until very recently the military budget remained low and stable and until 1974, did not account for more than 2 per cent of gross national product. Similarly, the evidence suggests that the Philippines has been reluctant to begin purchasing armaments. Minor purchases from the U.S.A., usually less than $1 million annually, have been made since 1966. The first significant order under the FMS programme, worth $31.3 million, was placed in 1975 followed in 1976 by a $71.0 million order for 11 F-5E light fighters and artillery.

Nevertheless, the imminent termination of US grant military assistance in the traditional sense and the escalating Muslim rebellion in the south have moved the government to increase its military effort and to secure a larger rental for the U.S. bases. In the past military assistance agreements and base right


27 Quoted in SIPRI, The Arms Trade with the Third World, op. cit., p. 457.
agreements were technically separate. The new pattern, already established in recent U.S. agreements with Spain and Turkey, is to like the two explicitly. As mentioned, late in 1976 the Philippines rejected a U.S. proposal for a $1000 million economic and military aid package in return for continuing base rights and negotiations will presumably be renewed with the Carter administration.

As was the case with the other ASEAN countries, the necessity (in some cases the desire) to purchase armaments has led the Philippines away from the United States when other suppliers could offer more attractive deals or more suitable weaponry. Thus light COIN aircraft (SF-260W) have been purchased from Italy, light transports (Nomad) from Australia and light tanks (Scorpion) from the U.K. Moreover, a Philippines aerospace industry has been launched with the assembly and, over time, local production under licence of the BN-2A Islander from the U.K. and Bo-105 utility helicopter from the Federal Republic of Germany.

Local defence production

It is useful to regard the term ‘defence industry’ in a broad sense as encompassing the ability to maintain, repair, assemble, manufacture and/or develop modern weapons and related equipment. If this is done it would appear that the spread of defence industries has been subject to two partly contradictory trends over the post-war period.

On the one hand the fast, wide-ranging and exceedingly costly pace of technological change imposed by the U.S.A. and the U.S.S.R. has effectively prevented any other country in the world from acquiring or preserving a genuinely independent, fully comprehensive capacity to develop and manufacture modern armaments. It is true that if a somewhat less rigid criterion is adopted several other countries, notably France and the U.K. can be regarded as being essentially independent but the main trend has been a decline in the number of countries able to offer a full range of technologically up-to-date weapons and equipments.

On the other hand there has been a conspicuous upward trend in the number of countries acquiring some form of industrial and/or technical capacity to handle weaponry and other military equipment. Furthermore, in virtually every case there is an evident commitment to expand this capacity both horizontally and vertically. An important feature is that most of the countries contributing to this trend are in the Third World. For these countries the opportunity cost of establishing defence industries of any kind are very high and at the same time they cannot entertain any real prospect of achieving even a moderate degree of independence. This is particularly true
in view of the fact that the level of sophistication of the weaponry being acquired by Third World countries has been and is, rising very fast.

It is of some interest, therefore, briefly to consider some of the possible explanations for this latter trend. A clearly dominant consideration is concern over the reliability of supplies of weapons, spare parts and technical assistance from foreign countries. All the Third World countries that have made a major sustained effort to develop defence industries have been subject to arms embargoes — for example, India, Israel and South Africa. It is unlikely that any of these countries entertain ambitions of complete independence except perhaps as a very long term objective. Nevertheless, once the major hardware items have been acquired, there is obvious military value in being able to keep these items operational by using domestic industrial and technical capacities. Without this a break in the flow of ammunition and essential spare parts could rapidly reduce a nation’s arsenal to impotence.

This line of argument can probably be applied in a linear fashion. That is, the greater fraction of a weapons system that can be manufactured in domestic facilities and from domestic raw materials the higher the degree of invulnerability to changes in the supplying country’s policy regarding arms exports. It is generally easier to secure delivery of components and subsystems. This strategic argument for local defence industries would be reinforced by considerations of convenience and cost. Once a nation has acquired a significant stock of major weapons reliance on foreign facilities for repair and maintenance is cumbersome and consumes foreign exchange.

Another contributing factor is the argument that local defence industries generate useful spinoffs for the economy in general, particularly by creating a pool of skilled labour and raising standards in manufacturing industries. The fact that this is an indirect and expensive way to acquire such skills and the substantial risk that the skills acquired will be useless for other purposes is not persuasive if a country genuinely perceives a need to minimise its reliance on external sources for its military requirements or if considerations of prestige play a major role.

These various pressures for establishing and continuously developing local defence industries have been facilitated in an important way by the increasing willingness of the major arms manufacturing concerns to sell technical and industrial expertise as well as their final products. The international market for armaments has become intensely competitive. Particularly in the last decade or so it has become very much a buyers’ market and buyers have exploited this situation to combine weapons purchases with the establishment of repair and support facilities, provision of technical assistance, assembly and/or licence-production rights and, occasionally, marketing privileges for their local defence industries.
In South-east Asia indigenous capacity for the support, repair, modification and manufacture of weapons and military equipment, though still small, narrowly-based and heavily dependent on imported materials and expertise, appears to have acquired a considerable momentum. A brief description follows of the capacities which exist in each South-east Asian country and of the known plans for expansion.

(a) Singapore

Despite being the smallest and most recently independent nation in South-east Asia, Singapore probably has the most extensive and certainly the most technologically advanced military-industrial facilities. As an island republic which has achieved rapid economic growth based on industrialisation and which has simultaneously built up substantial armed forces equipped with advanced weapons this is perhaps not surprising. In addition, it seems reasonable to suppose that the Israeli advisers strongly emphasised the value of an indigenous support capacity for weapons operated by the armed forces.

Finally, there is some evidence that the prospects for commercial viability have influenced the establishment of military-industrial facilities. Singapore is far from being the only country with these ambitions. The rapid growth of demand for armaments and equipment in Third World (i.e. non arms-producing) countries and the confident expectation that this trend will persist for the foreseeable future has attracted an increasing number of suppliers. The well established practice whereby major concerns in the industrialised world set up subsidiary concerns in low-labour-cost developing countries has, more recently, been extended to the military field and Singapore has clearly proved attractive in this regard.

The outstanding examples of defence production in Singapore are the refurbishing and modification of A-4 Skyhawk attack aircraft and the production under licence from West Germany of missile-armed patrol craft. An export order (from Thailand) for three of the latter was fulfilled early in 1977. The aircraft program, carried out by Lockheed Aircraft Services, Singapore, (L.A.S.S.) involved the modification of 32 A-4B Skyhawks to bring them up to the standard of current production models of this aircraft. L.A.S.S. is currently rebuilding three A-4Bs into tandem seat trainers.

The wide-range of new electronic sub-systems incorporated in Singapore Skyhawks is supported by Singapore Electronic Engineering (Pty) Ltd (S.E.E.L.), a company resulting from the Singapore government's take-over of the Royal Navy's Weapons and Electronic Repair and Maintenance Shop. The S.E.E.L. company's activities also include the general support of naval vessels including electronics and the repair and maintenance of all forms of ordnance. The company has secured work from regional navies and exports communications control systems.
Another government-owned establishment, Chartered Industries (Singapore) Ltd has produced small-arms ammunition since 1968 including, with assistance from Oerlikon Buhrle of Switzerland, 20mm-57mm ammunition for Bofors naval guns. Chartered Industries also has a licence from the Finnish concern, Tampella, to manufacture 60mm, 81mm and 120mm mortars including mortar bombs. Finally, the U.S. Colt M.16 automatic rifle has been assembled since 1967 with limited production of components being undertaken since 1971.

The most recently established defence industry, Avimo Singapore (Pty) Ltd, is a subsidiary of the UK-based United Scientific Holdings and specialises in military optics, including production, repair and maintenance. Since it opened in October 1974 Avimo Singapore has secured contracts to refurbish optical equipment ranging from infantry weapon sights to equipment on armoured vehicles, including tanks, both from the Singapore armed forces and other regional military establishments. On-going work includes the production of tank periscopes for an overseas customer.

(b) Malaysia
Two facilities can be mentioned. The first is Sharikat Explosives, a small-arms ammunition factory which started production in 1972. The Malaysian government has a controlling interest in this concern, other shareholders being Oerlikon Buhrle (Switzerland) Dynamit Noblag (F.R.Germany) and 3M (U.S.A.).

The second is the Leong-Lürssen shipyard at Butterworth. This yard is currently producing three gunboats of Lürssen design and may also be working on six missile-armed patrol boats (probably the Type 148 or a derivative) that reportedly will be armed with Israeli Gabriel missiles.

The local assembly of Heckler and Koch (F.R.Germany) 5.6 mm rifles in an army workshop has not proved successful and consideration is apparently being given to re-equipping the army with U.S. M.16 automatic rifles. A trial batch of 5000 M.16's was purchased in 1976.

However, it seems that further efforts will be made to establish a local small arms industry. In December 1976 Malaysia and Indonesia announced plans to collaborate in this field.

(c) Indonesia
Small arms production has a relatively long history in Indonesia, the main centre of production, the Pindad Ordnance Factory, having been established by the Netherlands after W.W.I. It is difficult to determine the nature of current production but Jane's Infantry Weapons suggests that production

28It is of some interest to note that the Israeli concern Soltam and Tampella are part of the same organisation.
includes or has included copies of the Browning 9mm pistol and of a Danish light machine gun and formal licensed-production of two rifles and a sub-machine gun of Italian origin. Mortars, mortar-bombs and hand grenades are, or can also be, produced. The mortars are copies of U.S. and Yugoslav weapons.

Naval ship-building capacity is small and, in recent years, the principal naval yard, the Surabaya Naval Dockyard, has only constructed 147-ton 'Mawar'-class patrol craft incorporating imported components and machinery. There are reports that the 4 missile-armed patrol boats ordered from South Korea will be supplemented by locally-built units.

The Indonesian aircraft industry dates back to 1961 when plans to develop such an industry were first announced. However, progress has been exceedingly slow. The first project was the assembly and later partial local production of a Polish two-seat trainer, the PZL-104. Less than 50 were produced. The second project concerned the U.S. Pazmany PL-2, a piston-engined light trainer. As with the PZL-104 the work, begun in 1975, consists primarily of assembly but with some local production of components. Late in 1976 this was supplemented by local assembly of the MBB Bo-105 helicopter (F.R. Germany) and the Spanish CASA-212 Aviocar light STOL transport. For both these aircraft the licensee, P.T. Nurtanio, manufactures subassemblies locally although the treated metals are supplied by the original manufacturer. In the case of the Aviocar the licence includes exclusive rights for the sale and support of the aircraft throughout Asia.

(d) Thailand

The production, or even assembly, of weapons and equipment in Thailand is essentially negligible at the present time. A 4000-unit production run of the Heckler and Koch HK33 5.56mm rifle got under way in 1975. Manufacture of a small number of Pazmany PL-2 aircraft has been undertaken and some efforts made to design a light trainer. The delivery of 24 CT-4 trainers from New Zealand in 1974 suggests this program has run into difficulties.

Naval construction is limited to very low technology, low tonnage units. However, ambitions to build a new naval dockyard, mooted since 1969, received a major boost in November 1976 when plans were announced to invest $275 million in such a yard in collaboration with the U.S.A. The U.S.A. will reportedly provide substantial materiel assistance and it is intended that the facility will ultimately be capable of constructing missile-armed patrol boats.29

(e) Philippines

As in Thailand and Malaysia existing capacity in the defence industry field in the Philippines is very small but there is clear evidence of ambitions to

change this state of affairs. Since 1967 the government has sponsored the construction of a small arms and ammunition factory but, through 1976, only ammunition in three calibres has been produced. It is reported that a licence has been acquired to produce the U.S. M.16 rifle. This capacity is supplemented by the Squires Bingham Manufacturing Company, a privately owned concern with a capacity to produce about 5000 weapons (rifles, shotguns and pistols) annually with associated ammunition although the required high-quality metals and chemicals must be imported.

A 150 mm vehicle-mounted surface-to-surface rocket is being developed using components supplied by Oerlikon of Switzerland. This weapon, reportedly called Bong-Bong II, was tested in 1975.

The foundation for the Philippine aircraft industry was laid in 1973 with the establishment of the Philippine Aerospace Development Corporation (P.A.D.C.). The first project to be got under way, in August 1974, was the assembly of 38 MBB Bo-105C utility helicopters. In February 1974 the first of 14 BN-2A Islander light transports arrived for fitting out in the Philippines; 20 more were assembled from imported components and the balance of the program, 60 aircraft, which will incorporate components manufactured in the Philippines, is currently under way. It is reported that the performance of the locally-assembled aircraft leaves something to be desired and sales are not meeting expectations. As a possible future program consideration is being given to the licensed production of the U.S. Super Pinto, a light jet aircraft capable of being configured for a counter-insurgency role.

On the design side PADC has developed a primary trainer, designated XT-001, the prototype of which flew late in 1975. The XT-001 is virtually a duplicate of the Italian SF-260, of which 48 were delivered to the Philippine Air Force in 1973-74, suggesting some form of collaboration or licence agreement.

Naval construction in the Philippines has so far been confined to minor patrol craft but here too plans for expansion are in hand including the local construction of sophisticated 50-foot vessels.30

Future weapons acquisition: A speculative forecast

It is clear from the foregoing review that the countries of South-east Asia have entered a new league in terms of the quality and sophistication of the weapons operated. It is also the case, however, that the range of weaponry

deployed is still quite narrow when compared to what is available. In other words there is ample scope for diversification. In this section we shall attempt to identify possible future trends in weapons acquisition.

This can be done in two ways. Firstly, one can start with the various pressures for more armaments that exist and proceed to identify the weapons or, more generally, the military capabilities, that will be demanded in response to these pressures. The second approach is a more mechanical one. This is to list the weapons currently available or under development which are designed for or known to be compatible with the major launching platforms already available in the region.

Weapons acquisition stimulated by specific pressures

On the first approach the primary threat faced by most of the nations in South-east Asia is guerrilla insurgency and a vast array of counter-insurgency (COIN) weapons and equipment is in existence. Many of these were developed in the United States in response to the demands of the war in Vietnam but most arms-producing countries offer COIN weapons because of the substantial demand.

The nations of South-east Asia already operate substantial numbers of major weapons primarily intended for COIN operations, particularly light attack aircraft, light armoured vehicles and helicopters. A continued strong demand for these items can be anticipated.

A variety of area weapons such as cluster bombs, anti-personnel mines and fuel-air explosives (FAEs) may be considered for acquisition if indeed they have not already been acquired. Cluster bombs such as the British BL755 or the U.S. Rockeye can be deployed on virtually any aircraft capable of carrying external stores. Similarly several FAE weapons are already available and, like cluster bombs, are compatible with a wide range of aircraft. The U.S. Marine Corps has a program to develop helicopter deployed FAEs.

Another area of technology that is being vigorously explored at the present time and which has considerable potential in the COIN role is the use of remotely piloted vehicles (RPVs) for a variety of missions ranging from surveillance to weapons delivery. As this technology matures cost effective systems are likely to become available particularly for such tasks as border and maritime surveillance.

Over the longer term consideration may be given to the acquisition of a variety of sensors for the remote detection of activity in selected areas. Available devices employ a variety of means of detection, including seismic, acoustic, infra-red and chemical sensors, and received considerable publicity from their widespread use by the United States in Vietnam. Indeed the
development and deployment of remote sensors was the primary factor in speculations in the later 1960s concerning the 'automated battlefield' of the future in which data from remote sensors would be collected and analysed by computers which would then select weaponry and direct its use against detected targets. Post-attack data from the sensors would be analysed to determine the effectiveness of the attack.

A second source of pressure is the likelihood that the weapon acquisition strategies of states within the region are mutually interactive. As noted earlier this pressure is not necessarily confined to states that perceive themselves as potential adversaries, a description that probably adequately covers the ASEAN-Indo-China situation. Even among states that enjoy friendly relations — as is the case within ASEAN — military planners are prone to base their decisions on the conservative premise that relations between states can change abruptly while military capabilities are inflexible over the short term. This essentially military consideration will be reinforced by considerations of prestige and respectability.

This does not mean that each state will seek to match, with a minimum of delay, every quantitative and/or qualitative improvement in the arsenals of its neighbours. Similarly it would be misleading to characterise such interactive weapons acquisitions as an arms competition. But whether or not the label 'arms competition' is appropriate it can be presumed that, for each country, military developments in neighbouring countries are among the most important factors determining the size and composition of its own armed forces.

Interactive weapons acquisition does not suggest a particular direction for future arms purchases until one country acquires weapons that are new to the region or qualitatively superior to those currently deployed. In ASEAN at the present time examples of such weapons would include mach 2 combat aircraft, air-to-surface missiles and modern submarines.

Indeed, since high-performance aircraft are already widespread in the region, pressures to acquire anti-aircraft missile systems can be anticipated. In recent years several mobile, medium-range, quick reaction anti-aircraft missile systems have become available. These are the British Rapier system (on order by Singapore) the French Crotale system and the French-German Roland system. For the same reason infantry-portable SAM systems may find a market — the RBS.70 (Sweden), Blow-pipe (U.K.), Redeye (U.S.A. and Stinger (U.S.A.).

Anti-tank guided weapons may provide another example although the proliferation of these weapons is perhaps less likely than mobile SAM systems.

Medium and heavy tanks are present only in small numbers although the region is not without its tank advocates. Singapore recently may have acquired a small number of U.S. M.60 main battle tanks and the Philippines took
delivery of 21 British Scorpion light tanks in 1976 and will acquire seven more in 1977. Moreover, it seems clear that Thailand considers the large Vietnamese tank force to be a potential threat.

In any case light armoured vehicles exist in substantial numbers and several advanced small anti-armour weapons are available, for example, the French-German Milan and the U.S. Dragon. The only guided anti-tank weapon deployed at the present time is the French Entac acquired by Indonesia in 1968.

A third source of pressure stems from countries outside the region but with the capability to bring military strength to bear in the region. As argued above, the prospect of an overt military threat from an external power is remote but the states of the region can be presumed to be anxious not to permit the independence and flexibility of their foreign policies to be too readily compromised by a show of force by some external power. The types of weapons considered desirable to deter this kind of threat are generally indistinguishable from those required for defence against external threats of any kind. An important caveat, however, is that the weaponry that a major external power could potentially bring to bear in South-east Asia is far more sophisticated and varied than that possessed by countries within the region.

Finally, the prospect of the 200-mile maritime economic zones and acceptance of the archipelagic concept is likely to sustain the already strong demand for naval units, particularly patrol boats and corvettes armed with anti-ship missiles. Worldwide there has also been a strong demand for short and medium-range submarines of advanced design. With the Indonesian order, placed in February 1977, for two 990-ton Type 209 patrol submarines from the Federal Republic of Germany the prospects for the regional proliferation of these weapons must be regarded as reasonably high. Malaysia's Chief of Naval Staff has also urged the acquisition of submarines.31

Another direction of procurement that can be predicted with some confidence is maritime surveillance aircraft. In anticipation of the demand for low-cost systems virtually every manufacturer of light and medium transport aircraft has developed a maritime surveillance version. Examples here include the HS748 Coastguarder (U.K.), the BN-2 Maritime Defender (U.K.), the F-27 Maritime (Netherlands), the Dash 7R (Canada) and the Westwind (Israel). To date in ASEAN only Indonesia and Thailand have acquired aircraft specifically configured for maritime surveillance, four Nomads from Australia and eight S-2 Trackers from the U.S.A. respectively.

Weapons currently under development applicable to the region

The second approach suggested above does not, in general, indicate the likelihood of a particular weapon being acquired. However, the fact that a weapon is compatible with an existing platform is a prima facie case for assuming that it will be considered for acquisition.

The modern combat aircraft deployed in South-east Asia are all of U.S. origin: F-5E Tiger II, A-4 Skyhawk and A-37 Dragonfly.32

There is a wide range of weapons associated with these aircraft in the United States. Particular weapons are sometimes associated with particular models of an aircraft or require the installation of a specific electronics subsystem. Where this degree of detail is known it will be taken into account, but it should not be regarded as a major constraint. If the sub-systems associated with a particular weapon exist then modification of the aircraft to carry this sub-system is usually not too difficult.

Air-to-air missiles

AIM-9 Sidewinder. This missile is standard armament on the F-5E (two per aircraft) and has been deployed on particular models of the A-4. A third-generation version of this infra-red-homing missile (AIM-9L) has just become operational in the U.S.A. and features an all-aspect attack capability.

Air-to-ground

AGM-12 Bullpup. This was a first-generation air-to-surface guided weapon first deployed in 1959 but continuous improvements were made over the ensuing decade with the latest version (AGM-12E) entering service in 1970. The missile comes in two basic versions: one with a 113 kilogram warhead and a range of about 11 kilometres and the other with a 250 kilogram warhead and a range of about 18 kilometres. In both cases guidance is by radio command link from the launching aircraft. The Bullpup is usually associated with the A-4 Skyhawk but it is also carried by the A-7, the P-3 Orion maritime patrol aircraft and various European NATO aircraft. However, Singapore’s A-4S Skyhawks are not configured to carry Bullpup. Between 1970 and 1974 a laser-homing version of the Bullpup (designated AGM-83A Bulldog) was fully developed for deployment on A-4, A-6 and A-7 aircraft. However series production was not undertaken because of the imminent availability of the laser-guided Maverick (see below). It is claimed that Bulldog was a low-risk, state-of-the-art development and that its relatively low cost per unit may lead to

32The older aircraft in the region will probably be phased out around 1980 or sooner. Malaysia’s F-86 Sabres had an estimated service life of about six years from the time of transfer (1969). The same is probably true of Indonesia’s F-86s acquired in 1973. The refurbished Hawker Hunters in Singapore, acquired in 1970, had an expected service life of ten years.
reinstatement of the program.

(b) AGM-45 Shrike. This is an air-to-surface missile employing passive radar-homing to attack radars associated with SAM installations. It has a range of 12-16 kilometres and is deployed on A-4, and A-7 aircraft of the U.S. Navy (among others). Although Shrike has been operational since 1964 the U.S.A. has apparently been reluctant to export the missile. As far as is known only Israel has received it.

(c) AGM-62 Walleye. This is an unpowered glide bomb guided to the target by a miniature TV camera. Walleye I has a 385 kilogram warhead and Walleye II a 900 kilogram warhead. Various models of the A-4 and A-7 aircraft are configured to carry this weapon. As far as is known only Israel has received this weapon.

(d) ‘Smart’ bombs. This nickname covers a rapidly expanding family of unpowered bombs with a variety of guidance devices to achieve high accuracy. Existing versions use both laser-homing and TV guidance. More recently versions with imaging infra-red (IIR) and distance-measuring equipment (DME) guidance modules have come into use. Versions also exist with small wings that deploy after the weapon has been released to increase stand-off range [GBU-15(V)]. A sub-group of the ‘smart bomb’ range carry the name Paveway and these are compatible with a wide range of aircraft. The relevant aircraft for our purposes are: F-5E, A-4 and A-37.

(e) AGM-65 Maverick. Despite the fact that this missile became operational just four years ago (1973), it has already been exported to a number of countries, both developed and developing. The initial version is TV-guided, has a range of about 26 kilometres and carries a 59 kilogram warhead. A longer-range version, called scene magnification Maverick, is also in production. Laser and imaging infra-red versions are in advanced development. Maverick is deployed, or intended for deployment, on several aircraft including the A-7. Of particular interest in the present context is that a special single-rail launcher has been developed for the F-5E. Since Israel has already penetrated the South-east Asian market for armaments it should be noted that this country has a Maverick-type missile under development (called Luz). One reason for this initiative is undoubtedly the high effectiveness of Maverick during the October 1973 Arab-Israeli war. The only Israeli complaint was that the Maverick had an excessively large warhead (59 kilograms) and the Luz will therefore probably be a lighter weapon with a smaller warhead.

(f) AGM-84A Harpoon. This is a sophisticated anti-shipping missile with a range in excess of 90 kilometres. The 232 kilogram warhead is capable of destroying targets ranging from patrol boats to destroyer-sized vessels. Although Harpoon will not become operational in the U.S.A. until 1976/77
it is already widely committed for export though primarily in its ship-launched version. The U.S. Navy plans to use Harpoon on S-3, P-3 and A-7 aircraft although the missile is compatible with a number of other aircraft, including helicopters.

(g) AM-39 Exocet. This weapon compares closely with Harpoon being an air-launched version of the MM-38 Exocet ship-launched cruise missile. Although developed primarily for deployment on French naval aircraft the AM-39 is mentioned here because Thailand and Malaysia are committed to the MM-38. If air-launched anti-shipping missiles come into vogue in South-east Asia commonalty would make the AM-39 a strong contender.

Ship-to-ship missiles

Two types of this class of missile are currently deployed in South-east Asia: the Israeli Gabriel (Singapore and Thailand) and the French Exocet (Malaysia).

(a) Gabriel.
The Gabriel exists in two versions with a range of 20 kilometres and 36 kilometres respectively. Both versions have been exported but it is not known which version (or versions) have been sold to Singapore and Thailand. Israel is known to be developing an even longer range (of the order of 70 kilometres) anti-ship missile which is likely to be compatible with the launching canisters for the Gabriel. A possible development is that Indonesia will acquire the ship-launched version of the Harpoon (RGM-84A-1). Indonesia has on order three frigates to be built in the Netherlands. It is probable that these frigates will be similar to the ‘Koortenaar’ class (under construction for the Dutch Navy) which have the Harpoon as their main offensive armament. Similarly, Indonesia has ordered missile-armed patrol boats from South Korea which is building a U.S.-designed boat under licence. The existing South Korean boats are equipped with the U.S. Standard semi-active radar-homing interim anti-ship missile but an order has been placed for 120 Harpoons. Harpoon is therefore a possible choice for the Indonesian boats.

(b) Exocet MM-40
Similarly, a longer-range version of the Exocet, designated MM-40, is expected to be available in 1977. The MM-38 has a range of 38 kilometres and the MM-40 will extend this to about 70 kilometres while the weight and dimensions of the missile will remain essentially unchanged.

Special Considerations for New Weapon Technologies

Some special considerations apply to new weapon technologies. As the foregoing survey indicates there is wide scope for the further proliferation of
modern weaponry in South-east Asia. These countries could be described as being on the lower rungs of the ladder in terms of the variety and sophistication of the weapons systems they possess, although the trend is clearly upward. For this reason alone the prospect for a destabilising pattern of future weapons acquisition must be regarded as high. The international trade in arms allows entirely new weapons systems or weapons with markedly superior performance to those existing in a region to be introduced with little or no warning. Whether or not the balance of real military strength fluctuates is not strictly relevant. The fact that the military scene appears to be changing rapidly is in itself destabilising.

Apart from the wide range of weapons systems or military capabilities which South-east Asian nations could acquire in the foreseeable future there is another aspect of the current generation of weaponry which requires special attention.

The rate of technological advance in the military field since World War II has been consistently fast. For this reason, although phenomenal advances have been achieved across the entire spectrum of weaponry and related equipment, very few advances have been regarded as revolutionary. There is, however, a widespread perception that some of the weapons and equipments that have recently become available and many more at various stages of development do constitute a revolutionary advance in weapons technology.

The new weapons incorporate technological advances achieved in a variety of areas — electronics, propulsion and warhead design — and have demonstrated capabilities that not long ago would have been considered unattainable. The aspect of weapon performance that has improved most dramatically is accuracy, the product of both new guidance technologies and significant refinements of existing methods of guidance. Hardly less significant are the major improvements that have been achieved in reliability and ease of operation. Finally, many of the new weapons are relatively inexpensive in the sense that they can be acquired in numbers which, when combined with the potential effectiveness of each individual weapon, will yield a very significant increment in effective destructive potential. This observation is reinforced by the fact that the principal targets of the new technology munitions — the main battle tank, the combat aircraft and the capital ship — are frequently between one and two orders of magnitude more expensive.

In terms of cost, reliability and ease of operation the latest generation of tactical weapons represents a significant departure from the established trends in these areas since World War II. In recent years even the United States has experienced difficulty in funding the procurement of adequate numbers of weapons developed under the philosophy that each weapon should be as capable as the available technology, however immature, would
allow. The pressures to break these trends have been reinforced, at least in the West, by the rapid increase in the cost of military personnel which placed a premium on developing weapons with minimum requirements for maintenance and specialised training for operators consistent with high performance.

The appearance of the new weapons and the demonstration of their effectiveness under operational conditions in Vietnam and the Middle East has given rise to considerable speculation as to their impact on such things as the balance between offence and defence, the conduct of military operations and the organisational structure and deployment of armed forces. There is a general consensus, amply borne out by the October 1973 Arab-Israeli war, that the pace of warfare will increase significantly and that materiel losses and rates of consumption of munitions will be very high. There is also a general consensus that, in order to take full advantage of the capabilities offered by the new technologies, major organisational changes are required. The new precision-guided munitions permit a small number of men (or a light armoured vehicle or a small patrol boat) to possess a formidable military capability. At the same time small, dispersed and more readily concealed units are an essential aspect of defence against the other side's precision weapons. If a nation's total military capacity is concentrated, immobile and exposed, a single, well-coordinated attack with PGMs could have a crippling effect.

Finally, a more tentative but highly significant speculation is that the new technologies will confer a decisive advantage to defence as against offence. Specifically, some observers feel that any nation which is well stocked with precision weapons and which structures and deploys its forces in the optimum fashion will be able to present, at a comparatively modest cost, a formidable defensive capability. Thus, it is felt, the proliferation of PGMs can be a major factor in favour of stability in areas where tensions are, or could be, high.

Past experience suggests that optimistic forecasts of this kind should be viewed sceptically. Even the most defensive of weapons can be and have been used offensively. Similarly, defensive systems usually play a vital supporting role in offensive operations and, of course, are used to defend territory acquired as a result of successful offensive thrusts. Moreover, many of the new technology weapons could be used very effectively in offensive roles particularly, of course, if the opponent lacked them.

In reality the new technology weapons will almost certainly proliferate asymmetrically. In this event countries without precision munitions or deficient in these weapons will probably have a heightened sense of insecurity because, on the one hand, an attack could materialise very rapidly and on the other, a single attack could be devastatingly effective. The net result is that
countries will feel compelled to remain more continuously alert to the possibility of attack and to keep their armed forces at a higher state of readiness at all times. Neither condition would contribute to regional stability and both would tend to increase the cost of the armed forces.

The proliferation of precision weapons may exacerbate regional instabilities and promote escalation in the level of armaments in another way. The remarkable capabilities of the new weapons will tend to mean that the tolerable margins of deficiency in weapons and equipment operated will become more narrow. Munitions now available have remarkably high probabilities of striking and destroying a target if permitted to realise their full potential. Thus a potential adversary may have air-to-surface and surface-to-surface precision weapons of slightly longer range, and an electronic warfare capability (counter-measures and counter-counter-measures) somewhat stronger and more flexible. In a PGM world imbalances of this kind can spell the difference between acceptable and devastating losses in conflict. In addition such imbalances would be very difficult to detect. The problems of preserving a military balance, already much more difficult in the field of conventional armaments when compared with nuclear armaments, will then be exacerbated and there is every prospect that arms race tendencies will be strengthened. The ever-present pressures generally to match the weapons and equipment acquired by neighbouring countries will be made stronger by PGMs because the consequences of any deficiency will be seen as so much greater.

The issue of cost is worth exploring in a little more detail. The prospect of securing a given military capability at lower costs than are now required is attractive to all countries, particularly developing countries. However, the low relative cost of many of the new technology weapons is unlikely to have a favourable impact on total military expenditures. There are various reasons for this. Firstly, if the proliferation of these new weapons tends to exacerbate instability and intensify arms race pressures, the potential benefits of low unit costs per weapon will be readily nullified. Secondly, the high rates of destruction that can, and indeed have, been achieved with the new weapons means that larger numbers of weapons platforms and equipment will be needed even if the expected duration of any conflict is measured in days or weeks. And although quality will clearly be traded for quantity an overall monetary saving is by no means assured. A main battle tank may cost $700,000 but it is difficult to buy an armoured vehicle of any kind for much less than $100,000. On the modern battlefield even minimal performance standards for a weapons system or a component thereof are demanding.

Even now the desire to enhance the effectiveness of precision weapons or to overcome counter-measures is producing a tendency towards more complex
systems although the munition itself remains 'cheap'. Thus new generation anti-tank missiles, in themselves cheap and compact, are being mounted in batteries on light armoured vehicles for greater mobility and protection. The Soviet SA-7 Grail, originally a hand-held, man portable surface-to-air missile, has emerged in enlarged form mounted on the BRDM-2 vehicle and has the NATO designation SA-9 Gaskin. Finally, the anti-ship missile-armed patrol boat, pioneered by the Soviet Union in 1959 with its 70-ton Komar-class boats, has developed into vessels ranging in size from 250 tons to 800 tons to permit the carriage of more launchers and a wider range of electronic equipment. Precision munitions have other costly implications. Maintaining large forces or a larger proportion of the armed forces in a high state of readiness is an expensive proposition. The same is true of dispersing, concealing and hardening or otherwise protecting military facilities. If precision-guided weapons with long range become generally available this process may have to be expanded to facilities which, though not strictly military, are vital to any defence effort. In most regions of the world surface-to-surface or air-to-surface missiles with a range of 200-300 miles, certainly less than 1,000 miles, would be regarded as strategic weapons capable of threatening an adversary’s homeland. Such weapons may further increase the incentives for surprise attack.

Finally, although many PGMs are relatively easy to use and have relatively low maintenance requirements they nonetheless incorporate advanced and sophisticated technology. The full costs of ownership, direct and indirect, and in particular of the necessary supporting infrastructure, will inevitably be high.

The widespread proliferation of precision weapons should not, therefore, be regarded with unreserved enthusiasm. Experience has demonstrated that analytic explorations of the political, military and economic ramifications of radically different weapons systems, particularly those forecasting enhanced security and stability, are more often than not proved wrong when the weapons are actually produced and deployed and when they are used in war. In any event the preliminary analysis of the ramification of PGMs and other new technologies reveals considerable ambiguity with some analysts arguing that their widespread proliferation will, on balance, be beneficial and others expressing strong reservations.

The next question, of course, is whether these weapons will in fact proliferate. The answer to this question is almost certainly yes. Many of the distinguishing characteristics of the new weapons make them extremely attractive to most countries. They can be acquired in respectable numbers at a cost which most countries can afford. Their reliability and comparative ease of operation promise to provide an effective military capability even to countries with a limited capacity to support advanced technology systems.
An observation made frequently in the past when developing nations (for example Indonesia) acquired large quantities of modern weapons was that their military capability should be heavily discounted because of the lack of technical skills to keep the weapons operational and the inability to exploit the full operational capabilities of complex systems. However, the new generation of weapons may not demand such local skills on the part of the user.

Constraints on proliferation

With regard to constraints on proliferation, the focus here is on the possibility that the major arms suppliers will restrict the availability of advanced weapon systems. In general the prospects do not seem particularly good. In recent years, particularly since the oil crisis of 1973/74, there has been a conspicuous relaxation of the few remaining inhibitions that the principal arms-producing countries had regarding the export of new and advanced technology conventional weapons systems.

Recently, however, there has been a contrary development. In May 1977, President Carter announced the guidelines that will govern U.S. arms transfers after October 1977. Given the importance of the U.S.A. as an arms supplier to South-east Asia, the considerable pressure that it could bring to bear on some of the other Western arms suppliers and the potential demonstration effect of any unilateral U.S. initiatives the new elements in Carter’s policy on arms transfers warrant scrutiny. Briefly, these new elements are as follows:33

(a) The US will not be the ‘first supplier’ of advanced weapons to states seeking a ‘new or significantly higher combat capability’.

(b) There will be a ban on the co-production of ‘significant weapons’.

(c) The ‘development or significant modification of advanced weapons systems solely for export will not be permitted’.

It is readily apparent that the impact of the new policy will depend greatly on how terms such as ‘significant weapons’ or ‘significantly higher combat capability’ are interpreted and on how resolutely the policy is implemented. The implementation of a more restrictive arms export policy will not be easy

33The words and phrases in quotation marks are taken from a newspaper account of the White House document that detailed the new policy. International Herald Tribune, 21-22 May 1977, pp. 1-2.
and it can be expected that the U.S.A. will frequently be under strong pressure to liberalise this policy and to make exceptions.34

However, the context in which President Carter set these new guidelines suggests that the policy will be enforced rigorously. Specifically, Carter said that 'the United States will henceforth view arms transfers as an exceptional foreign policy implement, to be used only in instances where it can clearly be demonstrated that the transfer contributes to our national security interests'. In addition he stated that 'in the future the burden of persuasion will be on those who favor a particular arms sale, rather than on those who oppose it'.

In short it seems highly probable that countries that do not have a ‘major defence treaty’ with the U.S.A. will find it more difficult than in the past to purchase advanced or sophisticated U.S. weapons and military equipment. Is then, a significant retardation in the proliferation of sophisticated conventional weaponry, specifically in South-east Asia, a real prospect?

Unfortunately there are important countervailing factors that must be taken into account before this question can be answered in the affirmative. Firstly, all outstanding U.S. commitments through October 1977 will be honoured. These commitments, will amount to some $40 billion, mostly from developing countries, and a not insignificant sum from South-east Asian countries. Secondly, the possibility that all the other major arms suppliers will emulate the U.S.A. is fairly remote. In the field of conventional weaponry there is very little for which the U.S.A. is the sole source of supply and, as was, made clear earlier, the ASEAN states have already substantially diversified their sources of armaments. Similarly, the three Indo-China states will remain substantially dependent on the Soviet Union and China for arms supplies and the former country has, if anything exhibited a growing propensity to use arms supplies to support foreign policy objectives.

In sum, if the nations of South-east Asia desire to limit the escalation of their military arsenals, they must themselves take the initiative.

A proposal for reducing the likelihood of an excessive and destabilising expansion of military arsenals in South-east Asia.

In arms control, as in just about everything else, what is most desirable is usually in conflict with what is feasible. Compromise is unavoidable but it

34 The exceptions made more or less explicit are the countries with whom the U.S.A. has ‘major defense treaties’. This would mean, at least, NATO, Japan, Australia and New Zealand. Israeli was also made a special case.
must be made at both ends. To attempt to achieve the most desirable goal too
directly and too quickly will usually yield proposals that will be dismissed as
unrealistic. At the same time an overly-rigid attitude on what is feasible will
preclude consideration of any scheme that may effectively improve the
situation or at least help to prevent any deterioration.

As we argued above, prevailing conditions in South-east Asia permit a
reasonable degree of optimism on the prospects for arms control. At the same
time, however, widespread insurgency warfare, considerable intraregional
suspicions, serious imbalances of military power and major political adjust­
ments being made both within the region and between the region and the rest
of the world make the picture less than comforting.

In these circumstances the nations of South-east Asia are unlikely to
entertain any proposals that would severely and rigorously restrict their
military options. Examples of such proposals might include a freeze on
military budgets and banning the introduction of certain types of weapons
or setting numerical limits on the more important weapons.

It is reasonable to assume that these countries would be concerned to
avoid involuntary or unintended interactive escalations in their military
 arsenals. But, as we have endeavoured to show, there are several aspects of
the prevailing situation that seem to contribute materially to the risk that
such involuntary or unintended escalation will occur. These are: a multi­
plicity of competitive suppliers each willing and able to produce and deliver
a wide range of weapons and equipments on short notice and, if desired, in
secrecy; numerous types of weapons and equipments which have yet to be
introduced by any country in the region; and an emerging generation of
remarkably effective conventional weapons, the ramifications of which are
still poorly understood.

The essence of the proposal to be advanced here is that much can be
achieved if the nations of South-east Asia can agree to be more communicative
regarding their perceptions of threats to their security. The escalatory pres­
sures inherent in the prevailing conditions would seem to be maximised if
states continue to determine their military requirements in isolation. However
amicable relations may be with neighbouring states, prudence usually dictates
that, in the final analysis, considerable weight be given to the military capa­
bility of one's neighbours in determining one's own military needs. This
mechanism is reinforced, often very strongly, by considerations of prestige
and respectability.

It is suggested, therefore, that the nations of South-east Asia should esta­

lish a procedure whereby each state contemplating a significant acquisition
of weapons would submit to every other state a detailed statement describing
the weapon, the number to be acquired and the reasons for the proposed
acquisition and invite reactions. Such an exchange, if done honestly, would contribute to mutual trust and confidence and would inhibit the introduction of weapons that would, for one reason or another, precipitate a round of similar or offsetting acquisitions. At the same time such a procedure would force countries to analyse the implications of new weapons acquisitions in more detail and in a longer time perspective than seems to be the case at the present time.

This in itself could be a very valuable exercise. For example, it is now widely appreciated that the development and deployment of strategic missiles with multiple independently-targetable re-entry vehicles (warheads), or MIRVs, was a mistake in the sense that the stability of the strategic nuclear balance would have been easier to preserve and arms control negotiations made significantly less complicated if this capability did not exist. Many observers believe that had the ramifications of MIRV been fully explored political decision-makers might have been convinced that the costs outweighed the benefits. In this way the U.S. MIRV program could have been frozen in its infancy in the mid-1960s while negotiations were held with the Soviet Union to persuade it to also forego this capability. The case of MIRV is a rather dramatic example but at all levels of armaments and in all parts of the world the evidence testifies to the predictability of the weapons acquisition process. Common sense suggests that countries exploit this predictability to assess the attractiveness, hypothetically, of the situation that would prevail after a further one or more rounds of weapons acquisition.

The requirement to solicit reactions from neighbouring states prior to the conclusion of a major arms contract would also help to slow down the rate of introduction of new or qualitatively different weapons. As argued above one of the main charges that can be laid against the present international trade in arms is that it permits and indeed encourages the rapid inflow of diverse weapon systems, particularly to regions where the range of existing types of weapons is narrow compared to what is available and where several suppliers are involved. It seems indisputable that a rapidly changing military scene is detrimental to regional stability and makes more probable hasty, ill-considered decisions on further additions to the military arsenals.

Although this scheme may not seem a particularly demanding one its adoption would nonetheless be a major step. Defence is a function that most governments regard as their exclusive responsibility. To permit other governments to make an input in military decision-making is not a step that will be taken lightly. It can also be presumed that governments will be reluctant to reveal, however indirectly, the nature and variety of the factors that influence their decision-making in the military field. It will be argued that some things are best left unsaid.
It is, of course, a truism to argue that governments considering participation in such a scheme must be persuaded of its potential value before they would willingly compromise exclusive responsibility for determining the nature and extent of their military preparedness. It is worth observing in this context that the scheme proposed here can be adopted on almost any level to suit whatever initial reservations participating governments may have. After a trial period the scheme could be made more rigorous by, for example, defining which categories of weapons require consultation, the degree of detail of the statements describing the proposed acquisition and the establishment of a forum in which points of view can be discussed and differences reconciled.

Apart from the major hurdle of having this scheme accepted in principle several other potential difficulties can be identified. One issue that may arise is whether the documents that will be exchanged under the proposed scheme should be made public or remain confidential. Although confidentiality will have many supporters, public knowledge of regional reactions to a planned purchase of weapons by any one country could serve as a useful restraint in the event that a country was determined to proceed despite the reservations or opposition of other countries. If these sentiments were public knowledge, the supplying country concerned might come under effective pressure to cancel the deal or to propose an alternative that lacked the features objected to. Clearly, however, a regional commitment to make the scheme work is a prerequisite. A determined buyer will always find a supplier.

A second difficulty may arise from the evident and understandable desire in all armed forces to have the best weaponry they can get. This could create difficulties because, in assessing a neighbouring country's proposal to acquire a particular weapons system, heavy reliance will probably have to be placed on military expertise. The military, in turn, may be inclined not to object to the proposal because they do not want in any way to jeopardise their own chances of acquiring new weapons.

An obvious recommendation, therefore, is that each government establish an agency independent of the military with appropriate skills to prepare these assessments. This internal capability could be supplemented in an important way by analysis conducted by external bodies. The U.S. Arms Control and Disarmament Agency, for example, is required to submit to the Congress arms control impact statements in conjunction with each major foreign order for U.S. weapons and equipment. These statements could be made available on request to countries likely to be affected by a particular transaction. More generally, the United Nations might consider the establishment of an office charged with conducting analytical studies of this kind as a service to member states.
A major problem here is the dearth of research efforts in the field of non-nuclear armaments. In the field of strategic weapons highly sophisticated models and techniques have been developed to assist in planning force levels and structures and to evaluate the significance of new weapons and new technological advances. For various reasons — the plethora of weapons and equipments, the large number of actors, the importance of terrain and vegetation and of the various technical skills involved in operating and maintaining complex equipment — non-nuclear armaments present a more complex problem. But there is no intrinsic reason why more sophisticated and systematic techniques cannot be developed in this field. At the very least this would lead to a better understanding of the arms acquisition process and would permit more detailed and realistic assessments of the 'balance' of military forces in the various regions of the world. It would also, of course, provide a basis for the evaluation and implementation of arms control measures.

Although it is rarely possible to show conclusively that interactive weapons acquisitions have occurred or are occurring, the proliferation of anti-ship missiles in South-east Asia represents an area in which the scheme outlined above might have been applied. Anti-ship missiles were first introduced into the region as early as 1961 when Indonesia acquired six 70-ton Komar-class boats from the Soviet Union each armed with two launchers for the 23 nautical mile range, active radar homing SSN-2 Styx missile. An additional six boats were delivered by 1965.

The evidence suggests that the acquisition of these boats did not precipitate any competitive acquisitions by neighbouring countries. The predominance of the British military presence at that time and the lack of appreciation of the utility of the missile-armed patrol boat as a weapons system are two possible reasons. The proliferation of anti-ship missiles appears to have started in 1970 by which time the operational state of Indonesia’s Styx missiles was open to question.

In 1970 Malaysia ordered the French SS.12 missile to arm four 95-ton boats acquired from the U.K. in 1967. The SS.12 is a short-range (3.3 nautical miles) wire-guided weapon with a warhead weighing 28.4 kilograms. In the same year Malaysia ordered four 234-ton ‘La Combattante II’-class boats from France each armed with two launchers for the MM.38 Exocet anti-shipping missile. With a 40 nautical mile range, a 150-200 kilogram warhead, a sea-skimming flight profile and a combined inertial/active-radar homing guidance system the Exocet is a highly effective weapon.

In 1970 or 1971 Singapore ordered six 230-ton missile-capable patrol boats from the Federal Republic of Germany and in 1972 ordered the Israeli Gabriel anti-ship missile to provide the main armament. The Gabriel has a range of 11 nautical miles, a 180 kilogram warhead, a sea-skimming flight profile and an active radar seeker to provide guidance demands. A second version is also available with a range of 22 nautical miles.

Singapore constructed the last four boats under licence in local shipyards and in 1973 Thailand placed an order for three vessels. Although the first two vessels for Thailand were delivered late in 1976 their missile armament has not been confirmed. As indicated earlier various sources indicate either the Gabriel or the U.S. Harpoon. The latter weapon would represent a further significant boost in the capability of anti-ship missiles deployed in the region. Harpoon is a sophisticated 60 nautical mile range sea-skimming weapon with active radar homing guidance and a large 232 kilogram warhead.

There have been two further developments. In 1976 Malaysia ordered four additional boats from Sweden and plans to equip them with four launchers for Exocet per boat. It is not inconceivable that the Exocet missiles to be fitted on these new boats will be the longer-range MM.40 version scheduled to become operational in 1977. A further six boats of Lürssen design may be under construction in a local shipyard. The Gabriel missile is reported to be the main armament.

The latest development has been the confirmation, in January 1977, of an Indonesian order for four missile-armed patrol boats from South Korea. South Korea is building a derivative of the U.S. ‘Ashville’-class under licence. The first boats are being fitted with Standard anti-ship missiles but eventually these will be replaced with Harpoon. It is therefore possible that Harpoon will arm the Indonesian boats, reportedly the forerunners of a fleet of up to 18 units.36

A casual observer presented with the foregoing sequence could reasonably conclude that a competition is underway. Can this conclusion be refuted? Clearly for purposes of fishery protection and anti-smuggling operations the missile-armed patrol boat represents a large measure of overkill. The primary rationale for these weapon systems is offensive operations against major surface ships. The number of major surface warships in regional navies is quite small which leaves as the main target the surface units of the major naval powers that either deploy or are capable of deploying such units to the region. Defence against seaborne invasion or, more likely, the capacity to ignore or deter attempts at gunboat diplomacy thus represents one plausible

36A Singapore shipyard currently has three 37-metre units under construction for Brunei. Each unit will carry three launchers for Exocet.
motive for the apparent popularity of the missile-armed patrol boat.\textsuperscript{37}

A second possible explanation is obviously the imminent adoption of the 200-mile maritime economic zones. All that need be said here is that too great a reliance on sophisticated, high capability naval units will substantially raise the cost, both in financial and human terms, in the event that violent clashes occur over jurisdictional disputes, poaching or whatever.

There are two other possible explanations for the proliferation of these weapons in South-east Asia both of which suggest an interactive pattern of acquisition. Firstly, as the Israelis demonstrated in October 1973, the missile-armed patrol boat is an effective weapon against its own kind. In engagements of this kind six Arab units were destroyed without loss.\textsuperscript{38} Secondly, in so far as prestige is a factor in weapons acquisition, the missile-armed patrol boat would rank very high as it combines high speed, long-range striking power and sophisticated electronics in a compact, affordable package. This does not mean that they are cheap. The new boats recently ordered by Malaysia will cost more than $16 million each and a single Exocet missile costs in excess of $300,000.

Assuming that there is an element of competition in this field in South-east Asia it could prove extremely costly over the longer term. As a weapons concept the missile-armed patrol boat is in its infancy, at least in the West, and the relevant technologies are extremely dynamic. The existing anti-ship missiles are first-generation weapons. Second-generation weapons will soon be available and third-generation models are in the early stages of development. The new weapons will have longer range, more effective and versatile guidance (particularly from the counter-measures point of view) and transonic or supersonic cruise speeds utilising ramjet or integral rocket/ramjet propulsion. Similarly, there is a clear upward trend in the size of these boats to provide a more stable firing platform and increased endurance and to permit the installation of more missile launchers, more powerful radars and a wider range of ECM and ECCM equipment. Finally, considerable efforts are under-

\textsuperscript{37} Relatedly, in November 1971, Indonesia and Malaysia declared jointly that the Straits of Malacca were not an international waterway although international shipping could use them in accordance with the principle of innocent passage. Implicit in this declaration is the right to intercept and inspect vessels suspected of violating this principle. The missile-armed patrol boat, at least for these two countries, is probably regarded as the ideal weapons system to enforce this principle.

\textsuperscript{38} Naval Lessons of the Yom Kippur War', Rear Admiral Benyamin Telem in Military Aspects of the Arab-Israeli Conflict, Louis Williams, editor, University Publishing Projects, 1975, pp. 233-236.
way in several countries — the U.S.A. U.S.S.R. France and Italy — to develop hydrofoil missile-armed patrol boats adding a further dimension for escalation.39

In short the scope for escalation, both quantitatively and qualitatively, seems particularly great in this field. A conscious attempt to limit the increase in the number of boats and to control and moderate the introduction of qualitative improvements could pay large dividends.

There are several other types of weapons that are readily available on the international market but have yet to be introduced into the region — for example, air-to-surface missiles, mobile surface-to-air missiles, and attack helicopters. In addition the only submarines in the region, 2 or 3 ‘Whiskey’-class boats in the Indonesian Navy, will be phased out in the near future. A thorough, ex-ante, review of the implications of introducing (or re-introducing) such weapons into the region might be extremely beneficial. In the case of submarines such a review is urgent since Indonesia has two modern units on order from the Federal Republic of Germany.

As a final comment it is stressed that this paper does not deny that the nations of South-east Asia have legitimate requirements for modern armed forces, both to defend against threats to internal security and to deter external aggression. The scheme proposed here is not designed to lower the level of armaments. Nor is it directed at existing ‘imbalances’ in the level of armaments. Finally, it is not suggested that states should take any risks in order to reduce or moderate the rate of acquisition of new weaponry or the increase in military expenditure.

What is suggested is that there are a number of factors at work — essentially the non-threat factors discussed above — that may lead states to incur substantial military expenditures that are superfluous from the standpoint of national security and, indeed, would probably undermine security over the longer term. The scheme proposed in this paper is designed to serve as a regional counter-measure against these pressures.

While the proposal advanced in this paper addresses a specific set of problems the potential benefits of its adoption are considerably wider. Specifically, the adoption of a policy deliberately designed to restrain the escalation of military arsenals could contribute significantly to preventing a slide towards military and ideological confrontation between the Communist and non-communist states of South-east Asia.

Appendix 1: Major weapons acquired or on order by ASEAN countries, 1970-77

<table>
<thead>
<tr>
<th>Country</th>
<th>Type, description</th>
<th>No.</th>
<th>Supplier</th>
<th>Outstanding orders/comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Combat aircraft</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>A-37B, light strike</td>
<td>16</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OV-10A, COIN</td>
<td>32</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AU-23A, COIN</td>
<td>34</td>
<td>U.S.A.</td>
<td>16 F-5E fighter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(U.S.A.)</td>
</tr>
<tr>
<td>Malaysia</td>
<td>F-86, fighter</td>
<td>16</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F-5E, fighter</td>
<td>14</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>Hunter, fighter/slide/ strike/rece</td>
<td>38</td>
<td>U.K.</td>
<td>12 (Oman)</td>
</tr>
<tr>
<td></td>
<td>BAC.167, light strike</td>
<td>16</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A-4S, attack</td>
<td>40</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>F-86, fighter</td>
<td>16</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OV-10F, COIN</td>
<td>16</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F-51D, COIN</td>
<td>14</td>
<td>U.S.A.</td>
<td>21 F-5E/F (U.S.A.)</td>
</tr>
<tr>
<td>Philippines</td>
<td>SF-260W, COIN</td>
<td>16</td>
<td>Italy</td>
<td>11 F-5E (USA)</td>
</tr>
<tr>
<td></td>
<td><strong>Helicopter</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>UH-1, utility</td>
<td>109</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FH-1100, utility</td>
<td>16</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CH-47, transport</td>
<td>4</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>S-61 transport</td>
<td>6</td>
<td>U.S.A.</td>
<td>6 (U.S.A.)</td>
</tr>
<tr>
<td></td>
<td>Alouette III, utility</td>
<td>8</td>
<td>France</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bell 47, light</td>
<td>6</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bell 206, utility</td>
<td>5</td>
<td>U.S.A.</td>
<td>delivery continuing</td>
</tr>
<tr>
<td></td>
<td>SA.341 Gazelle, utility</td>
<td>3</td>
<td>France</td>
<td>[5 Bell.212 (U.S.A.)]</td>
</tr>
<tr>
<td>Singapore</td>
<td>Alouette III, utility</td>
<td>8</td>
<td>France</td>
<td></td>
</tr>
</tbody>
</table>

1Where deliveries under a particular transaction took place prior to as well as after 1970 the total number involved is shown.
<table>
<thead>
<tr>
<th>Country</th>
<th>Type, description</th>
<th>No.</th>
<th>Supplier</th>
<th>Outstanding orders/comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>S-55, transport</td>
<td>10</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alouette III, utility</td>
<td>(4)</td>
<td>France</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bell 206B, utility</td>
<td>2</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bell 47, light</td>
<td>3</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BO-105, utility</td>
<td>5</td>
<td>Germany</td>
<td>assembled from imported components</td>
</tr>
<tr>
<td>Philippines</td>
<td>UH-1, utility</td>
<td>25</td>
<td>U.S.A.</td>
<td>18 (U.S.A.)</td>
</tr>
<tr>
<td></td>
<td>FH-1100, utility</td>
<td>8</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BO-105, utility</td>
<td>5</td>
<td>F.R.</td>
<td>33 being assembled locally</td>
</tr>
<tr>
<td></td>
<td>AC-47A, gunship</td>
<td>12</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>C-123, medium</td>
<td>(35)</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HS.748, medium</td>
<td>2</td>
<td>U.K.</td>
<td>4 C.212 Aviocar (Indonesia/Spain)</td>
</tr>
<tr>
<td>Malaysia</td>
<td>C.130, heavy</td>
<td>(2)</td>
<td>U.S.A.</td>
<td>4 (U.S.A.)</td>
</tr>
<tr>
<td></td>
<td>DHC-4, medium</td>
<td>6</td>
<td>Canada</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F-28, medium</td>
<td>2</td>
<td>Netherlands</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>Airtourer 150, light</td>
<td>6</td>
<td>New Zealand</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skyvan, light</td>
<td>6</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>C.130, heavy</td>
<td>3</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C.47, medium</td>
<td>(10)</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C.47, medium</td>
<td>2</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nomad, light</td>
<td>2</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Twin Pioneer, light</td>
<td>12</td>
<td>Malaysia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C.212, medium</td>
<td>6</td>
<td>Spain</td>
<td>8 F.27 medium (Netherlands)</td>
</tr>
<tr>
<td>Philippines</td>
<td>C.130, heavy</td>
<td>4</td>
<td>U.S.A.</td>
<td>2 (U.S.A.)</td>
</tr>
<tr>
<td></td>
<td>C.123, medium</td>
<td>15</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BN-2A, light</td>
<td>9</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nomad, light</td>
<td>12</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C.47, medium</td>
<td>(20)</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beaver, light</td>
<td>12</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>S-2F Tracker</td>
<td>8</td>
<td>U.S.A.</td>
<td></td>
</tr>
</tbody>
</table>

Maritime reconnaissance

Thailand | S-2F Tracker | 8 | U.S.A.
<table>
<thead>
<tr>
<th>Country</th>
<th>Type, description</th>
<th>No.</th>
<th>Supplier</th>
<th>Outstanding orders/comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>Nomad</td>
<td>4</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td><strong>Missiles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>MIM-23A Hawk, SAM</td>
<td>(40)</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sidewinder, AAM</td>
<td>&quot;</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seacat, SAM</td>
<td>&quot;</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gabriel, SSM</td>
<td>&quot;</td>
<td>Israel</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>MM.38 Exocet SSM</strong> (France)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>SS.12, SSM</td>
<td>&quot;</td>
<td>France</td>
<td>repeat order in 1976</td>
</tr>
<tr>
<td></td>
<td>Exocet, SSM</td>
<td>&quot;</td>
<td>France</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sidewinder, AAM</td>
<td>&quot;</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seacat, SAM</td>
<td>&quot;</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>[Gabriel SSM (Israel)]</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>Bloodhound II, SAM</td>
<td>56</td>
<td>U.K.</td>
<td>being delivered</td>
</tr>
<tr>
<td></td>
<td>Rapier, mobile SAM</td>
<td>&quot;</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gabriel, SSM</td>
<td>&quot;</td>
<td>Israel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sidewinder, AAM</td>
<td>&quot;</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td></td>
<td></td>
<td><strong>MM.38 Exocet SSM</strong></td>
</tr>
<tr>
<td>Philippines</td>
<td></td>
<td></td>
<td></td>
<td>Sidewinder, AAM (U.S.A.)</td>
</tr>
<tr>
<td><strong>Ships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>Frigate, 1780t, seacat</td>
<td>1</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAM</td>
<td>2</td>
<td>U.S.A.</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Corvette, 900t</td>
<td>3</td>
<td>Singapore</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Missile patrol boat, 230t</td>
<td>10</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patrol boat, 130t</td>
<td></td>
<td></td>
<td>3 missile patrol boats, 255t</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Italy)</td>
</tr>
<tr>
<td>Country</td>
<td>Type, description</td>
<td>No.</td>
<td>Supplier</td>
<td>Outstanding orders/comments</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------</td>
<td>-----</td>
<td>-----------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Frigate, 1250t, Seacat SAM</td>
<td>1</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Missile patrol boat, 234t</td>
<td>4</td>
<td>France</td>
<td>[4 (France)] 4 missile patrol boats (Sweden)</td>
</tr>
<tr>
<td>Singapore</td>
<td>Missile patrol boat 234t</td>
<td>6</td>
<td>F.R.</td>
<td>4 built in Singapore</td>
</tr>
<tr>
<td></td>
<td>Patrol boat, 100t</td>
<td>6</td>
<td>Germany</td>
<td>4 built in Singapore</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Frigates, 1450t</td>
<td>4</td>
<td>U.S.A.</td>
<td>3 corvette (Neth.) 4 missile patrol boat (S. Korea) 2 submarines</td>
</tr>
<tr>
<td></td>
<td>Patrol boat, 146t</td>
<td>2</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td>Philippines</td>
<td>Frigate, 1590t</td>
<td>1</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frigate, 1766t</td>
<td>6</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Destroyer escorts, 1220t</td>
<td>2</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patrol vessel, 640t</td>
<td>3</td>
<td>U.S.A.</td>
<td></td>
</tr>
</tbody>
</table>

**Armoured Vehicles**

<table>
<thead>
<tr>
<th>Country</th>
<th>Type, description</th>
<th>No.</th>
<th>Supplier</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>Shorland AC</td>
<td>32</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>Ferret AC</td>
<td>600</td>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commando AC</td>
<td>(200)</td>
<td>U.S.A.</td>
<td>100 (U.S.A.)</td>
</tr>
<tr>
<td></td>
<td>AML/M-3 APC</td>
<td>140</td>
<td>France</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>AMX-13 light tank</td>
<td>75</td>
<td>Israel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>V-100 Commando AC</td>
<td>30</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>V-200 Commando AC</td>
<td>250</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M.113 APC</td>
<td>(220)</td>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>V-150 Commando AC</td>
<td>58</td>
<td>U.S.A.</td>
<td>100+ (U.S.A.)</td>
</tr>
<tr>
<td>Philippines</td>
<td>Scorpion light tank</td>
<td>21</td>
<td>U.K.</td>
<td>7 (U.K.)</td>
</tr>
<tr>
<td></td>
<td>M.113 APC</td>
<td>35</td>
<td>U.S.A.</td>
<td>delivery continuing</td>
</tr>
</tbody>
</table>
Appendix 2: Introduction of jet combat aircraft by ASEAN countries, 1955-1978

<table>
<thead>
<tr>
<th>Year</th>
<th>Thailand</th>
<th>Malaysia</th>
<th>Singapore</th>
<th>Indonesia</th>
<th>Philippines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>Vampire</td>
<td></td>
<td></td>
<td></td>
<td>F-86</td>
</tr>
<tr>
<td>1956</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1957</td>
<td>F-84G</td>
<td></td>
<td></td>
<td>MiG-17</td>
<td>F-86</td>
</tr>
<tr>
<td>1958</td>
<td></td>
<td></td>
<td>MiG-17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1959</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td></td>
<td></td>
<td>II-28, MiG-19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1961</td>
<td>F-86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1962</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TU-16</td>
</tr>
<tr>
<td>1963</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1964</td>
<td></td>
<td></td>
<td></td>
<td>MiG-21</td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F-5A</td>
</tr>
<tr>
<td>1966</td>
<td>F-5A</td>
<td>CL-41 (COIN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1967</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1968</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td>F-86</td>
<td>BAC.167,0.1968</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td></td>
<td>Hunter,0.1968</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>(3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td></td>
<td>F-86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td></td>
<td>A-4s,0.1972</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td></td>
<td>F-5E,0.1972</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>(5)</td>
<td>F-5E,0.1976(2)</td>
<td></td>
<td>F-5E,0.1976(4)</td>
<td>F-5E,0.1976</td>
</tr>
<tr>
<td>1976</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>F-5E,0.1976(2)</td>
<td>F-5E,0.1976(4)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Year of introduction recorded; 0 = ordered.
(2) On order since May 1972; funding problems delayed final contract.
(3) Order for Mirage V cancelled.
(4) F-4 Phantom acquisition planned; F-5E ordered instead.
(5) Order for A-7 Corsair II cancelled.
Appendix 3: Introduction of missile-armed patrol boats by ASEAN countries 1961-79

<table>
<thead>
<tr>
<th>Year</th>
<th>Thailand</th>
<th>Malaysia</th>
<th>Singapore</th>
<th>Indonesia</th>
<th>Philippines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>Komar, 75t</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 x Styx,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>Perkasa, 95t</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 x SS.12, (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>TNC-48, 230t</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 x Gabriel,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>Perdana, 234t</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 x Exocet, (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1976</td>
<td>TNC-48, 230t,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TNC-48?, 230t,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 x Gabriel?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 x Gabriel?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td>Spica-M, 250t,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exocet (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1979</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. The data is recorded as follows: name of class or type of boat, displacement, number and type of missile, total number of boats acquired or on order.

2. Reported to be the forerunners of a class of 18.
### Appendix 4: Supplier-recipient matrix for major weapons, ASEAN countries, 1970-1977

<table>
<thead>
<tr>
<th>Country</th>
<th>USA</th>
<th>France</th>
<th>UK</th>
<th>Australia</th>
<th>Canada</th>
<th>Italy</th>
<th>Israel</th>
<th>Spain</th>
<th>FR</th>
<th>Germany</th>
<th>New Zealand</th>
<th>Netherlands</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippines</td>
<td>A.C.D.E.</td>
<td>E.N.</td>
<td>E.</td>
<td>B.C.</td>
<td>D.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. The matrix includes firm orders.
2. A = jet combat aircraft
   B = other combat aircraft (COIN)
   C = trainers
   D = helicopters
   E = transport aircraft
   F = SA missiles
   G = SS missiles (naval)
   H = AA missiles
   J = major fighting ships
   K = minor fighting ships
   L = submarines
   M = other naval vessels
   N = tanks
   O = other armoured vehicles
3. Via Singapore
4. Via Indonesia
5. Being built under licence
6. Via South Korea
The Strategic and Defence Studies Centre,
Research School of Pacific Studies,
The Australian National University.

The aim of the Strategic and Defence Studies Centre, which was set up in the Research School of Pacific Studies in The Australian National University, is to advance the study of strategic problems, particularly those relating to the general region of the Indian and Pacific Oceans and South-east Asia. Participation in the Centre's activities is not limited to members of the University, but includes other interested professional and Parliamentary groups. Research includes not only military, but political, economic, scientific and technological aspects. Strategy, for the purpose of the Centre, is defined in the broadest sense of embracing not only the control and application of military force, but also the peaceful settlement of disputes which could cause violence.

This is the only academic body in Australia which specialises in these studies. Centre members give frequent lectures and seminars for other departments within the ANU and other universities. Regular seminars and conferences on topics of current importance to the Centre's research activities are held, and the major defence training institutions, the Joint Services Staff College, and the Army and RAAF Staff Colleges, are heavily dependent upon SDSC assistance with the strategic studies sections of their courses.

Since its inception in 1966, the Centre has supported a number of Visiting and Research Fellows, who have undertaken a wide variety of investigations. Recently the emphasis of the Centre's work has been on problems posed for the peace and stability of Australia's neighbourhood; the defence of Australia; arms proliferation and arms control; decision making processes of the higher levels of the Australian Defence Department; management studies and the role of the Minister in Australia's defence policy making; and the strategic implications of developments in South-east Asia, the Indian Ocean and the South West Pacific Area.

The Centre contributes to the work of the Department of International Relations through its graduate studies program; and the Department reciprocates by assisting the Centre in its research. A comprehensive collection of reference materials on strategic issues, particularly from the press, learned journals and government publications, is maintained by the Centre.

The Centre also conducts seminars and conferences which have led to several volumes of published proceedings.
Proceedings of Conferences

Organised by The Strategic and Defence Studies Centre:

Distributed by:
ANU Press, Canberra.

- The Future of Tactical Airpower in the Defence of Australia. Ed. Desmond Ball $5.00
- The Strategic Nuclear Balance: an Australian Perspective. Ed. Robert O'Neill $5.00

Distributed by:
The Strategic and Defence Studies Centre,
ANU, Canberra.


All prices are exclusive of postage.
Canberra Papers on Strategy and Defence

The following papers have been published:

1. Alex Hunter *Oil Supply in Australia's Defence Strategy*
2. Geoffrey Jukes *The Strategic Situation in the 1980s*
3. J.L. Richardson *Australia and the Non-proliferation Treaty*
4. Ian Bellany *An Australian Nuclear Force*
5. P.H. Partridge *Educating for the Profession of Arms*
*7. T.B. Millar *Soviet Policies in the Indian Ocean Area*
8. Ian Bellany and James L. Richardson *Australian Defence Procurement*
*9. John Welfield *Japan and Nuclear China*
11. Darcy McGaurr *Conscription and Australian Military Capability*
12. Peter King *The Strategy of Total Withholding*
*13. W.A.C. Adie *Chinese Military Thinking under Mao Tse-tung*
14. Geoffrey Jukes *The Development of Soviet Strategic Thinking Since 1945*
*15. Hedley Bull *The Moscow Agreements and Strategic Arms Limitation*
16. Ron Huisken *Arms Limitation in South-east Asia: A Proposal*

*Out of print.

All are priced at .90 cents, plus postage, and are available from —

The Strategic and Defence Studies Centre,
Research School of Pacific Studies,
The Australian National University,
Box 4 PO, Canberra ACT 2600