

SOROTAN DARAT



KEPUASAN PELANGGAN DIUTAMAKAN



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MENGURUS PELANGGAN DALAM TENTERA DARAT

Lt Kol Khairuddin Hj Abu Bakar



PENGENALAN

'Mengurus Pelanggan' merupakan satu perkara yang tidak semudah difikirkan. Ini adalah kerana pelanggan berbeza diantara satu sama lain dari segi corak perilaku (behaviourial pattern), penjenisan tugas (nature of task), peranan dan tanggungjawab serta pelbagai aspek yang lain. Berdasarkan kepada perbezaan ini, adalah sukar untuk kita menjangkakan keperluan pelanggan dengan tepat seperti apakah taraf perkhidmatan yang dikehendaki dan apakah corak bantuan yang diperlukan? Kadangkala dengan kepelbagaian keperluan oleh pelanggan ia menyulitkan pengurusan memenuhi kehendak pelanggan. Falsafah yang mengatakan 'customer is always right' memang tepat sekali. Justeru itu, seringkali kita berhadapan dengan pelanggan, yang mengatakan 'I don't know how! What I want I must get'.

Keperluan untuk memberi penekanan ke atas

aspek 'Mengurus Pelanggan' semakin terserlah pada dewasa ini. Jutaan ringgit telah dibelanjakan untuk pembelian pelbagai keperluan logistik bagi Tentera Darat. Namun begitu, masih lagi terdapat tanda-tanda ketidakpuasan pelanggan ke atas khidmat yang diberikan. Tambahan pula dengan perkembangan teknologi yang semakin pesat menyebabkan keperluan daripada pelanggan telah menjadi semakin rumit dan mencabar. Pelanggan sentiasa berkehendakkan agar semua keperluan ditemui dengan kadar secepat mungkin. Ini boleh diibaratkan 'today's demands are to be met yesterday'. Oleh yang demikian, sebagai sebuah organisasi yang di dalam era 'Kemajuan Saingan' (Competitive Edge) maka amat perlu pengutamaan ke atas pelanggan diberi perhatian yang sewajarnya.

TUJUAN

Tujuan rencana ini adalah untuk membentangkan satu paradigma pendekatan strategi perkhidmatan di dalam mengurus pelanggan.

MEMPERKENALKAN MODEL STRATEGI PERKHIDMATAN

STRATEGI PERKHIDMATAN

Memberi keutamaan kepada pelanggan merupakan satu pendekatan yang perlu diberi sanjungan. Pelanggan adalah orang terpenting kepada sesuatu organisasi. Kepentingannya berupaya mempengaruhi sesuatu organisasi dengan memberi satu jaminan samada organisasi itu dikekalkan atau dibubarkan. Memahami pelanggan merupakan perkara utama di dalam pembentukan organisasi yang sihat. Anggapan bahawa organisasi tidak

mempengaruhi pelanggan adalah satu tanggapan yang perlu diberi penilaian di dalam era kemajuan saingan.

Sebagai satu langkah untuk memberi perkhidmatan yang unggul dan efektif, Model Strategi Perkhidmatan yang diperkenalkan oleh Dennis Walker perlu dijadikan sandaran di dalam memberi fokus kepada pelanggan. Secara demikian organisasi mendapat maklumbalas tentang apakah persepsi perkhidmatan yang patut diberikan oleh organisasi. Adakah imej yang akan ditonjolkan boleh merealisasikan matlamat organisasi? Adalah penting bagi sebuah organisasi membentuk strategi perkhidmatan sebagai pegangan staf di dalam organisasi atau untuk dijadikan sebagai falsafah organisasi. Sila Lihat Rajah 1, yang merupakan 'Model Strategi Perkhidmatan'.

Lazimnya, strategi perkhidmatan akan dipengaruhi oleh tiga aspek utama seperti pembentukan visi atau wawasan organisasi, ekspektasi pelanggan dan prestasi pesaing (competitor performance). Berdasarkan kepada kefahaman ini, yang merangkumi tiga aspek utama, maka dua aliran perkhidmatan yang merupakan perkhidmatan individu (personal service) dan perkhidmatan material (material service) memainkan peranan penting di dalam menstabilkan organisasi. Perkara ini akan dibincangkan secara terperinci apabila aspek tersebut disentuh nanti.

EKSPEKTASI PELANGGAN

Manusia mempunyai cita rasa tersendiri dan berubah mengikut selera berdasarkan kepada ragaman barangan dipasaran. Demikian juga dengan pelanggan. Perubahan kepada kehendak pelanggan akan berlaku apabila ekspektasi mereka berubah mengikut kepada edaran masa. Perubahan ini akan berlaku semata-mata untuk menyesuaikan diri mereka kepada perubahan teknologi di dalam persekitaran pasaran. Biar apa jua pun perubahan berlaku, yang paling penting sekali adalah pengetahuan mereka tentang prestasi organisasi untuk menandingi masalah dan keperluan mereka. Lantaran dari itu adalah perlu organisasi mengauditkan pengetahuan mereka sendiri

dan apa yang mereka tahu tentang pelanggan. Sebagai contoh:

- * Menganalisis aduan : Apakah tanggapan pelanggan tentang prestasi organisasi dan adakah mereka membayangkan kepada kita apakah keperluan mereka sebenar.
- * Adakah data tentang keperluan pelanggan yang boleh untuk membantu perkhidmatan mereka.
- * Tanyakan kepada staf adakah pelanggan berpuashati perkhidmatan yang diberikan oleh organisasi.

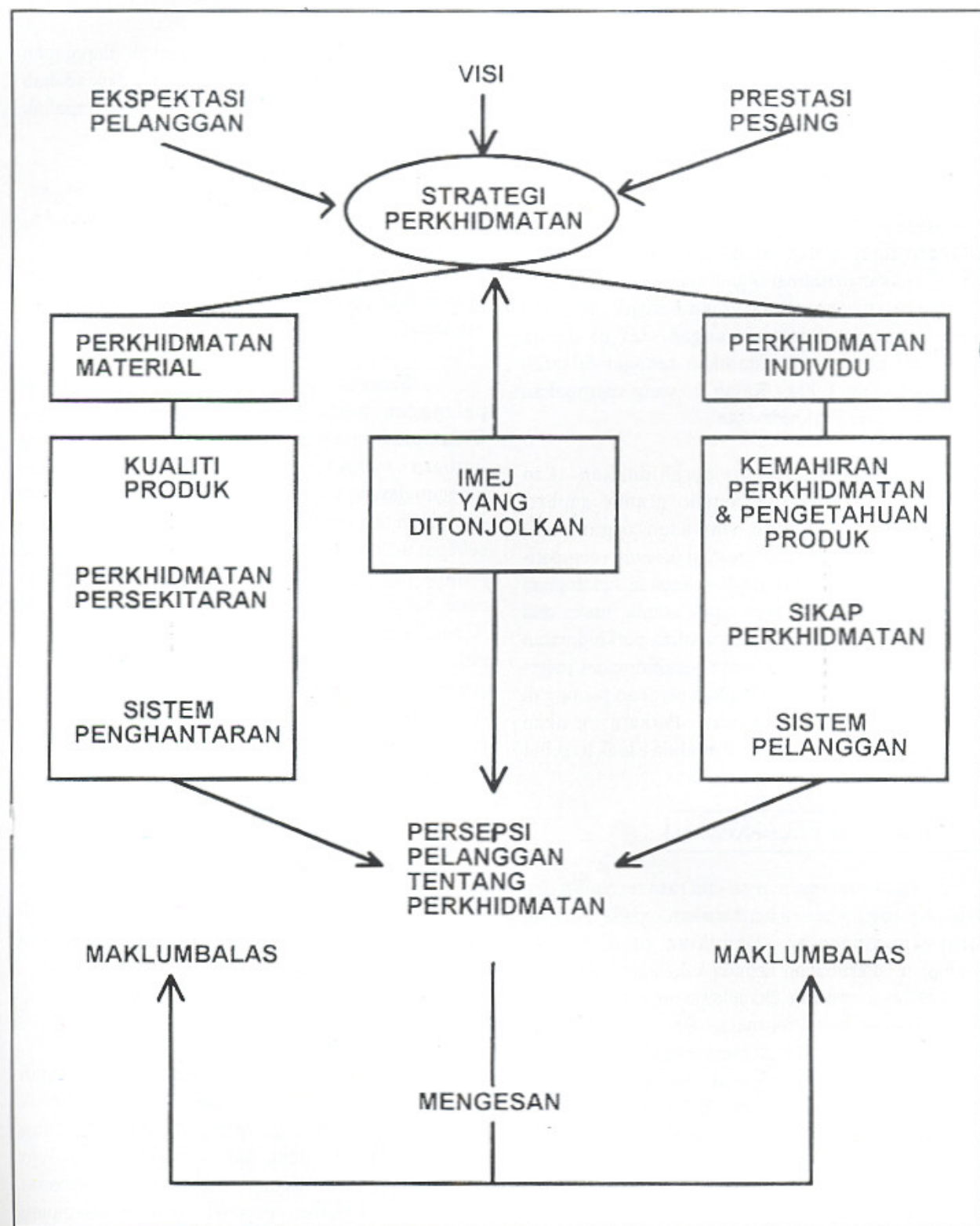
Setepimana yang telah dijelaskan bahawa pelanggan berbeza diantara satu sama lain. Disamping mereka mempunyai cita rasa yang berbeza, mereka juga mempunyai peranan dan tanggungjawab yang berbeza. Di dalam memerangi keperluan ini banyak kaedah telah diperkenalkan sebagai maklumbalas di dalam mengesan kehendak pelanggan. Mengambil hotel dan syarikat penerbangan sebagai contoh, mereka menggunakan 'Comment Cards' untuk mengetahui persepsi pelanggan tentang perkhidmatan yang diberikan. setengah daripada jabatan dan firma menggunakan 'Suggestion box' dan 'questionnaire sheet' untuk mempertingkatkan perkhidmatan mereka.

Di dalam menandingi isu ini, kepekaan kita tentang keperluan dan kehendak pelanggan perlu diambil kira. Sikap yang sentiasa menunggu untuk diberitahu (always need to be told) perlu dikikiskan. Memahami keperluan dan memberi perkhidmatan di dalam jangkamasa yang dikehendaki akan meningkatkan lagi kepercayaan mereka.

PRESTASI PESAING

Berpengetahuan tentang pesaing adalah penting di dalam era kemajuan saingan. Untuk menandingi pesaing pengetahuan tentang perkembangan semasa dan kemajuan teknologi hendaklah sentiasa diikuti. Ianya dapat membantu kita mempertingkatkan produktiviti kerja disamping

RAJAH 1: MODEL STRATEGI PERKHIDMATAN



demikian adalah mustahak untuk mengetahui siapakah pesaing kita. Di dalam organisasi tentera mungkin ada yang beranggapan bahawa organisasi tidak ada pesaing kerana peranan dan tanggungjawab yang berbeza dilakukan dari agensi kerajaan yang lain.

Di dalam kemajuan pesaing, keupayaan melebihi pesaing hendaklah diutamakan. Ini bermakna kita hendaklah sentiasa berada dua langkah di hadapan (two steps ahead) pesaing kita. Perkara ini adalah mustahak untuk mengetahui apakah pesaing kita sedang lakukan atau apakah strategi mereka dimasa akan datang. Pesaingan juga wujud di dalam TD, kerana setiap organisasi didalamnya ingin menonjolkan imej dan kewibawaan tersendiri.

Mewujudkan persefahaman di antara satu sama lain adalah penting di dalam usaha mengeratkan keakraban dan menjalin hubungan yang harmoni. Usaha ini akan tercapai sekiranya semua perkhidmatan mengetahui tanggungjawab dan berkomitmen di dalam menjalin kemesraan dan menghindarkan persaingan yang kurang sihat.

VISI

Selepas memahami ekspektasi pelanggan dan mengetahui prestasi pesaing, langkah seterusnya adalah untuk mewujudkan wawasan organisasi. Wawasan atau visi organisasi merupakan matlamat yang ingin dicapai di dalam jangka masa panjang. Mengambil depot Ordnans sebagai contoh pada penerangan ini, pembentukan visi adalah seperti berikut:

MISI

Menjadikan Kor Ordnans sebuah organisasi logistik yang prihatin dan responsif berupaya memberi bantuan dan khidmat nasihat bersabit dengan pengurusan inventori Ordnans kepada Kor-kor di dalam Tentera Darat demi untuk mencapai objektif Tentera Darat.

COGAN KATA

"Kepuasan Pelanggan Diutamakan".
(Bagi menjayakan misi ini, Slogan di atas digunakan sebagai visi di dalam mencapai matlamatnya.)

LOGO



(Ini diperkenalkan berpandukan kepada cogan kata yang digunakan sebagai lambang untuk memaklumkan satu perubahan yang berlaku).

OBJEKTIF

- * Mempunyai imaginasi di dalam mengurus, mengendali dan memasarkan perkhidmatan dengan lebih efisien.
- * Mewujudkan persekitaran kerja yang memuaskan di mana staf-staf dapat menyerlah potensi masing-masing.
- * Peka terhadap perubahan kepada keperluan pengurusan.
- * Untuk mewujudkan suasana kehidupan bermasyarakat yang sihat.

Di dalam sesuatu organisasi adalah penting bagi setiap peringkat pengurusan atasan mewujudkan visi untuk dijadikan falsafah organisasi sebagai pegangan staf di dalam pencapaian matlamat. Visi ini merupakan panduan ke arah pencapaian matlamat organisasi. Tanpa visi, organisasi hanya dapat berfungsi untuk memenuhi kehendak pelanggan dari masa ke masa sahaja.

PERKHIDMATAN INDIVIDU

Keuntuhan sesebuah organisasi itu bergantung sepenuhnya kepada staf atau individu yang menjalankan tanggungjawab. Kewibawaan staf adalah penting di dalam mencerminkan peranan dan tugas organisasi. Staf merupakan orang perantaraan di antara organisasi dan pelanggan. Jalinan ikatan kemesraan perhubungan diantara staf sesama staf dan staf dengan pelanggan adalah penting untuk mewujudkan kepercayaan dan persefahaman. Separuh daripada perjuangan organisasi akan tercapai sekiranya staf menjalankan tanggungjawab dengan penuh komitmen dan rela hati.

Staf perlu melengkapkan diri dengan pengetahuan dan kemahiran yang secukupnya. Ini adalah kemelut (crucial) untuk merealisasikan keupayaan organisasi di dalam memenuhi ekspektasi pelanggan. Kurang pengetahuan dan kemahiran staf dengan bisnes yang diceburi mengakibatkan pelanggan menjauhkan diri. Tambahan pula, apabila pelanggan tidak mempunyai keyakinan dengan staf yang berurusan, dengan secara langsung mereka akan hilang kepercayaan kepada organisasi tersebut. Dibalik pula, staf akan hilang keyakinan diri untuk memberi satu perkhidmatan dengan baik apabila peluang didapati terbuka. Ini akan membuat mereka teragak-agak untuk meyakinkan diri mereka, boleh atau tidak mereka memberi perkhidmatan sepertimana yang dikehendaki. Kesan yang paling ketara sekali adalah ianya boleh merosakkan nama baik organisasi tersebut. Elemen penting kepada pengetahuan dan kemahiran staf yang perlu dikaji adalah:

- * Pengetahuan teknikal.

- * Pengetahuan produk.
- * Pengetahuan tentang tanggungjawab dan organisasi.
- * Kemahiran tentang penyelesaian masalah dan sebagainya.
- * Mengawal aduan.
- * Bersopan santun dan berbudi bahasa.

Mempunyai pengetahuan dan kemahiran bukanlah segala-galanya di dalam mencapai ekspektasi pelanggan tanpa sikap yang betul. Perkara yang sering ditonjolkan tentang kelemahan memberi bantuan dan perkhidmatan adalah sikap yang tidak kisah (couldn't care less) terhadap pelanggan. Sikap bertahan (defensive attitude) hendaklah dihindari apabila staf berinteraksi dengan pelanggan. Sebarang aduan dan cadangan dari pelanggan hendaklah diterima dengan hati terbuka untuk memperbaiki kelemahan yang diperhatikan. Sikap pengurus dan ketua jabatan adalah penting untuk memotivasikan staf kerana mereka boleh mempengaruhi sikap staf terhadap pelanggan. Ketua Jabatan hendaklah mempunyai pandangan terbuka untuk menandingi sebarang isu dalam mengatasi sebarang masalah. Perlu ditegaskan bahawa sikap bukannya perkara mudah untuk ditukar dan ianya memerlukan masa.

Akhir sekali di dalam perkhidmatan individu adalah sistem pelanggan (people system). Sistem ini mestilah dirangka bertujuan untuk memberi motivasi kepada staf didalam membantu pencapaian strategi perkhidmatan. Ianya hendaklah merangkumi keperluan pelanggan, program pengendalian, latihan teknikal dan sebagainya. Paling utama yang perlu difahami adalah cara-cara staf di dalam organisasi dibentuk dan diuruskan untuk memberi perkhidmatan yang cemerlang.

PERKHIDMATAN MATERIAL

Bagi memastikan ekspektasi pelanggan dapat

ditemui sepenuhnya, aspek perkhidmatan material yang cemerlang memainkan peranan penting. Perkhidmatan ini dapat dilihat samada ianya memuaskan kehendak pelanggan atau tidak? Adakah ianya perlu diubahsuai mengikut kesesuaian? Perkhidmatan material dapat dibahagikan kepada kualiti produk, persekitaran dan sistem penghantaran.

Kualiti produk adalah tunjang utama didalam memuaskan pelanggan selain daripada harga, jualan dan pemasaran yang juga merupakan aspek penting. Sepertimana kita ketahui pelanggan berkesanggupan untuk membayar harga yang tinggi ke atas produk yang berkualiti dan bermutu tinggi serta khidmat yang diberikan. Perkara ini dapat direalisasikan dan ianya memerlukan komitmen dari semua peringkat pengurusan di dalam organisasi untuk menentukan:

- * Tugas diterangkan dengan jelas.
- * Maklumat prestasi dihubungkan kepada staf yang menjalankan tugas.
- * Kaedah kepada proses kerja hendaklah sentiasa ada pada sesiapa yang terlibat dengan tugas.

Selain dari aspek di atas, perkhidmatan persekitaran juga penting didalam menentukan samada pelanggan akan berurusan dengan kita atau tidak. Cara kita mempersembahkan organisasi kita kepada pelanggan adalah mustahak. Macam manakah bentuk foyer? Apakah imej yang ingin ditonjolkan? Apakah kemudahan yang disediakan?

Perkara yang dinyatakan di atas, memberi kesan kepada organisasi sebagai satu kaedah untuk menarik pelanggan. Aspek persekitaran perlu dititik berat bukan sahaja ianya mengakibatkan pelanggan tetapi kepada staf di dalam organisasi. Ini juga melibatkan kemudahan asas, prosedur dan suasana kerja.

Akhir sekali adalah sistem penghantaran.

Sistem ini merangkumi pembungkusan, penghantaran, kenderaan, pesanan, rumah stor dan pusat informasi. Salah satu sebab kepincangan dalam sistem penghantaran adalah:

- * Barang rosak dalam transit.
- * Apa yang dimohon tidak ditemui.
- * Barang yang dimohon segera, lewat diterima.
- * Kualiti permohonan dikurangkan.
- * Salah menerima barang yang diperlukan.

Walaupun terdapat perbezaan diantara swasta dan agensi kerajaan di atas, kaedah yang digunakan adalah sama iaitu bertujuan untuk memuaskan pelanggan.

PERSEPSI PELANGGAN TENTANG PERKHIDMATAN

Dari huraian yang telah diterangkan, perkhidmatan individu dan material yang diperlukan bertujuan untuk memuaskan pelanggan. Kaedah cara mengesan pencapaian perlu juga diberi perhatian yang serius sebagai usaha mempertingkatkan perkhidmatan. Persepsi pelanggan tentang perkhidmatan adalah penting untuk mengenalpasti samada mereka berpuashati dengan perkhidmatan yang diterima atau sebaliknya.

Usaha untuk mempertingkatkan perkhidmatan pelanggan adalah mustahak. Di dalam organisasi tentera beberapa langkah boleh diambil seiring dengan kaedah yang diamalkan oleh pihak swasta sebagai usaha untuk mencapai matlamat. Kepuasan pelanggan tidak terbatas sekiranya teknik pengurusan moden digunakan.

CADANGAN UNTUK MENGURUSKAN PELANGGAN

Dari analisis yang dibincangkan, beberapa unsur perlu dipertimbangkan untuk memastikan

'Mengurus Pelanggan' dapat dipertingkatkan. Unsur yang dicadangkan merupakan langkah yang harus diambil oleh organisasi bagi mencapai wawasan yang telah ditetapkan.

PERKHIDMATAN INDIVIDU

Khidmat Susulan Oleh Staf. Khidmat susulan atau "after sales service" ini amatlah mustahak. Melalui cara ini ianya akan dapat memudahkan perolehan maklumbalas ke atas sesuatu barangan atau perkhidmatan yang terlibat. Dalam masa yang sama, ianya memudahkan maklumat terkini, berkaitan dengan arahan atau polisi disalurkan kepada pelanggan. Ini dapat membantu dalam mengatasi sebarang masalah yang timbul. Khidmat susulan ini seharusnya diimplementasikan oleh staf di setiap tahap pengurusan. Staf sepatutnya berperanan sebagai fasilitator untuk memberi khidmat nasihat kepada pelanggan dan tidak sepatutnya berfungsi sebagai 'ambassador' semata-mata.

Konsep Window Shopping. Konsep ini telah lama diperkenalkan. Sebagai 'custodian' kepada aset kerajaan, depot-depot hendaklah mempertingkatkan usaha untuk menggalakkan unit datang melawat ke rumah stor bagi menyesuaikan diri dengan barangan dalam simpanan dan mengenalpasti barang yang diperlukan. Melalui pendedahan ini, kadar pengeluaran dapat dipertingkatkan disamping mengelakkan barangan daripada lusuh dalam penstoran. Objektif 'Window Shopping' adalah seperti berikut:

- * Menimbulkan kesedaran tentang barang dalam pengestoran.
- * Konsep tranperansi terhadap barangan dalam simpanan.
- * Pengetahuan tentang barang stor (designasi, kualiti dan kegunaan).

Melalui cara ini akan dapat membolehkan mereka mengenalpasti barang-barang yang difikirkan perlu untuk dibuat permohonan. Pada masa yang

sama akan mengurangkan jumlah pegangan barang yang tidak bergerak. Secara tidak langsung akan dapat membolehkan pelanggan membiasakan diri dengan keadaan pengurusan stor-stor terbabit.

Mesyuarat Kuartermaster. Mesyuarat di antara depot dengan KM pasukan-pasukan amatlah mustahak. Ianya perlu diadakan sekurang-kurangnya sekali pada setiap penggal. Dengan mengadakan mesyuarat sedemikian, ianya akan dapat mengatasi pelbagai masalah dan rungutan pelanggan. Mesyuarat ini juga dapat menjalinkan hubungan yang erat diantara pelanggan dengan depot Ordnans bagi mengatasi masalah berkaitan dengan kontrak, tatacara kerja serta prosedur.

Lawatan Oleh Staf Depot. Adalah dicadangkan agar lawatan oleh pegawai memerintah/Perintah Ordnans dilakukan ke pasukan. Melalui cara ini dapat memperolehi maklumbalas tentang sebarang permasalahan yang timbul ke atas perkhidmatan yang diberikan. Disamping itu juga, staf depot berupaya untuk memberi khidmat nasihat, menyemak pegangan inventori pasukan dan mengetahui masalah yang timbul.

Tumpangan Anggota Unit Ke Depot.*

Salah satu cara yang sesuai bagi memberi pendedahan kepada anggota-anggota KM pasukan keatas prosedur kerja harian adalah dengan mengadakan program tumpangan anggota di depot-depot Ordnans. Program ini dapat dikoordinasikan diantara pihak pasukan yang terlibat dengan depot-depot Ordnans.

- * Kebaikan yang akan diperolehi melalui program ini adalah seperti berikut :
- * Pendedahan keatas prosedur kerja harian.
- * Merupakan kesinambungan latihan setelah anggota terbabit menghadiri kursus di LATEDA.
- * Anggota tumpangan

berkenaan dapat memberi perhatian ke atas unit masing-masing.

* Mewujudkan latihan "on job training".

* Merupakan orang perantara antara pasukan dan depot.

Mewujudkan Jawatan Ordnans Di Pasukan. Mewujudkan jawatan Ordnans di peringkat pasukan untuk mengetahui masalah pasukan dengan lebih jelas. Melalui cara ini akan dapat membantu pihak pengurusan pasukan menyelesaikan sebarang masalah berkaitan dengan Ordnans. Wakil ini kelak, akan dapat memberi maklumat awal ke atas semua aktiviti yang melibatkan keperluan Ordnans.

Wujudkan Pusat Informasi Dan Perkhidmatan 'Counter Service'. Depot-depot Ordnans dicadangkan supaya mewujudkan Pusat Informasi dan mengamalkan konsep perkhidmatan 'Counter Service'. Pusat Informasi ini berfungsi bagi menyediakan sebarang khidmat nasihat dan menyediakan maklumat yang diperlukan oleh pasukan berkaitan kedudukan permohonan pasukan, stok barang-barang dan pelbagai maklumat yang lain. Disamping itu, pengeluaran barangan yang terdapat dalam pegangan stok dapat dibuat pengeluaran dalam tempoh masa yang bersesuaian tanpa melalui proses pengeluaran yang ditetapkan.

Kursus Untuk Anggota Pasukan. Kursus ini perlu diadakan untuk anggota pasukan. Ianya diadakan dengan tujuan bagi melengkapkan anggota dengan pelbagai pengetahuan berhubung pengurusan stor dan prosedur perolehan barang. Ini termasuklah aspek-aspek berikut:

* Latihan untuk cara penggunaan skala.

* Cara-cara membuat permohonan barang yang betul.

* Latihan pengendalian inventori.

* Memberi tunjuk ajar kepada anggota yang kurang mahir.

PERKHIDMATAN MATERIAL

* **Komputerisasi.** Melalui sistem maklumat mengurus, penggunaan komputer secara menyeluruh antara depot Ordnans dengan unit-unit akan dapat mempertingkatkan lagi khidmat perkhidmatan. Sistem ini dapat memudahkan pihak pengurusan mengetahui kedudukan stok dan membuat keputusan sewajarnya.

Tempoh Had Ekonomi. Disebabkan peruntukan perbelanjaan senggaraan barang-barang tersebut pada setiap tahun adalah terhad dan kos pengantiannya yang tinggi. Bagi barang yang mempunyai 'Tempoh Had Ekonomi' seperti barang-barang pakaian dan tilam, disyorkan supaya dimasukkan kedalam senarai BAT L117 untuk setiap anggota.

Kebaikan. Kebaikan yang diperolehi melalui sistem ini adalah seperti berikut:

* Mengelakkan daripada ianya disalahgunakan.

* Mengelakkan salah agihan.

* Memastikan agihan dibuat mengikut hak skala.

* Penggantian dibuat setelah barang tersebut sampai tempoh had ekonomi pertukaran.

Mewujudkan Kategori Warna Untuk Inventori. Untuk depot-depot Ordnans, disyorkan agar penggunaan warna dipraktikkan di rumah-rumah stor bagi semua barang. Dengan penggunaan warna

ini ianya memudahkan pengurusan stor mengenal pasti kelarisan stor tersebut. Warna yang disyorkan kelak adalah mengikut kategori berikut:

- * Merah. Bagi barang sangat laris. (Vital)
- * Hijau. Bagi barang laris. (Essential)
- * Kuning. Bagi barang kurang laris. (Desireable)

Sistem Bar Coding. Memperkenalkan Sistem Bar Coding di dalam pengurusan inventori di depot-depot Ordnans adalah satu langkah yang baik. Sistem ini merupakan satu teknologi yang mudah dan telah digunakan secara meluasnya dalam sektor komersil. Teknologi ini dapat diserapkan dalam perkhidmatan TD khususnya untuk menguruskan "consumer product" dengan menggunakan simbol-simbol kod dan nilai yang mana boleh mempercepatkan transaksi pengeluaran. Ianya dapat menjimatkan masa dan mengurangkan proses pengeluaran.



Mewujudkan Cawangan Pengawetan Di Depot Ordnans. Sebelum sesuatu barangan itu dikeluarkan kepada pasukan, adalah perlu untuk memastikan barangan tersebut boleh digunakan sepenuhnya (serviceable). Ini boleh dilaksanakan dengan mewujudkan satu Cawangan Pengawetan yang berfungsi khusus untuk mengawet dan menyenggara barang-barang di dalam simpanan. Ini bertujuan untuk menentukan bahawa barangan yang dibuat pengeluaran kepada pelanggan berada di dalam keadaan yang baik dan boleh digunakan.

Mengkaji Semula Prosedur Dan Borang ATM. Di dalam mengurus pelanggan proses mempercepatkan pengeluaran perlu dikaji semula. Perhatian hendaklah ditumpukan kepada memendekkan prosedur untuk mengelakkan dari melalui perbagai proses yang tidak penting. Cara penstoran pula boleh dikategorikan kepada barang sangat penting, penting dan diingini. 'Single accounting system' perlu diperkenalkan di depot-depot Ordnans selaras dengan Arahan Perbendaharaan. Borang ATM yang sedia ada perlu diubahsuaikan bagi mengurangkan pengisian maklumat yang tidak perlu yang melambatkan proses.



Lt Kol Khairuddin telah ditauliahkan pada tahun 1971 ke dalam Kor Ordnans. Beliau pernah menghadiri kursus diseberang laut termasuk Commonwealth and Foreign Ordnance Officer Course di Blackdown Barrack, Surrey, England, Ordnance Officer Advanced Course di Aberdeen Proving Ground, Maryland, USA, Senior Ordnance Officer (Management) Course di Jabalpur, India dan menghadiri seminar Institute Industrial Engineers di Australia. Berkelulusan Maktab Turus Angkatan Tentera dan Diploma Pengurusan Perindustrian di Universiti Kebangsaan Malaysia. telah menyertai tugas PBB di Somalia sebagai Senior Staff Officer Logistics Operations and Plans di Markas UNOSOM II.

MENGENAL PASTI RONDA KUMPULAN KECIL

Lt Kol Che' Hashim bin Ishak

PENDAHULUAN

Struktur Tentera Darat masa kini jelas mendedahkan jurang perselisihan di dalam fungsi sesuatu organisasi dengan tepat. Keupayaan memperoleh perisikan dan sasaran tempur melalui Ronda Kumpulan kecil (RKK) nyata telah jarang sekali dilazimkan. Walau sekalipun bentuk keupayaan ini telah diakui hasil daripada beberapa kajian dan pengalaman, tiada langkah-langkah positif diambil untuk menggunakan sepenuhnya (daya dan keupayaan) kumpulan yang sedia wujud dalam pasukan khas atau menubuhkan agensi tinjauan baru yang organik kepada formasi-formasi. Sementara itu kerap kali pemerintah merungutkan tentang kekurangan maklumat dan perisikan tempur yang tepat semasa menjalani operasi. Akibatnya operasi itu tidak mendatangkan hasil yang diharapkan. Kelemahan ini perlu mendapat perhatian yang sewajarnya.

Di dalam suasana pertempuran konvensional nanti, banyak terdapat perkara-perkara yang akan membimbangkan pemerintah formasi. Di antara yang paling mendesak pada mana-mana ketika, adalah maklumat dan perisikan mengenai musuh di hadapan dan di rusuk setiap pertahanan formasi, serta bagaimana tindakan pihak musuh akan mempengaruhi pencapaian matlamat seseorang pemerintah. Adalah dipercayai bahawa sumber maklumat dan perisikan melalui kegunaan RKK telah dilucutkan daripada keupayaan pemerintah-pemerintah pada ketika ini. Kegagalan untuk memperluaskan kegunaan kemudahan ini mungkin berlaku berdasarkan kepada dua faktor:

- * Terlalu berpaut kepada agensi perisikan yang lain, dan
- * 'prejudice' kepada organisasi elit.

TUJUAN

Rencana ini bertujuan untuk mengenal pasti sumber maklumat dan perisikan tempur yang menggunakan tenaga manusia melalui fungsi Ronda Kumpulan Kecil.

LATAR BELAKANG

Pengalaman Tentera Darat dalam operasi menentang penganas komunis di sempadan Malaysia/Thailand, pendalaman Semenanjung Malaysia dan di Sarawak telah banyak melihat kebuntuan dan kegagalan. Kerap kali pihak musuh telah dapat melancarkan tindakan mengejut seperti menyerang hendap pasukan keselamatan dan telah mengakibatkan kerugian nyawa dan senjata. Kadangkala, kejadian seperti ini berlaku dengan sewenangnyanya di dalam kawasan yang seharusnya dikuasai sepenuhnya oleh sesuatu pasukan. Maka jelas setakat ini pasukan-pasukan yang terlibat dalam operasi mengalami masalah perisikan dan maklumat tempur dalam kawasannya sendiri.

Selama ini Tentera Darat terlalu berpaut kepada Cawangan Khas Polis Diraja Malaysia, iaitu satu-satunya agensi yang tertubuh tegap, malah juga hinggakan maklumat semasa bagi sesuatu kawasan operasi. Struktur organisasi perisikan tentera belum lagi lengkap untuk bertindak sebagai sebuah agensi perisikan kepada Tentera Darat yang tersendiri walaupun dengan tertubuhnya Kompeni

Perisikan di peringkat Divisyen kerana elemen yang mencari perisikan tempurnya terlalu kecil dan tidak dapat menguasai secara menyeluruh medan pertempuran di hadapan dan rusuk formasi tersebut. Dengan keadaan ini maka tidaklah dapat dinafikan bahawa banyak faktor-faktor kelemahan telah timbul mahupun di segi mendapatkan membahagikan atau menindakkan perisikan yang diperolehi oleh yang asing dari organisasi sendiri. Sungguhpun terjalin pertalian yang erat di antara kedua belah pihak dalam usaha untuk menumpaskan musuh negara, namun demikian ada kalanya persaingan di antara pertubuhan dan faktor yang lain telah menjejaskan pengaliran perisikan dan maklumat kepada pihak tentera.

Sementara itu masalah kekurangan perisikan dan maklumat tempur di peringkat unit dan formasi tidak diatasi dengan menggunakan sumber yang sedia ada dengan sepenuhnya. Kebiasaannya kawasan operasi yang dipertanggungjawabkan adalah terlalu luas dan tidak mudah dikuasai oleh kekuatan daya tempur sesebuah unit. Tugas rondaan yang menjadi sumber maklumat tempur di dalam pasukan tidak dilaksanakan dengan bersistematik dan berkesan. Unit pula tidak diperuntukkan dengan kawasan yang tetap dan jangka masa yang berlanjutan kepada sesuatu kawasan operasi. Pertukaran tanggungjawab yang kerap tanpa ambil alih juga telah menjejaskan kelanjutan dan maklumat dalam pengendalian operasi.

Penubuhan Platon Risik Tempur (UCIS) dalam tiap-tiap pasukan infantri mulai tahun 1973/74 merupakan satu-satunya langkah yang lebih positif ke arah penyelesaian masalah mendapatkan perisikan diperingkat unit dan formasi. Sungguhpun platon UCIS tersebut dilatih untuk bertindak dalam kumpulan seksyen, ia telah tidak dipergunakan dengan betul. Platon ini akhirnya dianggap sebagai kekuatan penggempur yang elit dalam sesebuah pasukan dan kerap digunakan dalam tugas penggempur dan pemusnah. Di peringkat awal penubuhan platon tersebut, aturgerak dan

pengendaliannya dikawal pesat oleh Markas Divisyen buat beberapa ketika. Sekali lagi pemerintah unit dilucutkan daripada menggunakan kemudahan organisasinya sendiri dalam usaha untuk mendapatkan perisikan tempur yang sangat diperlukan.



KURANG ARIF KEMAMPUAN PASUKAN ELIT

Pemerintah-pemerintah formasi pada umumnya kerap kurang memahami peranan dan fungsi pasukan khas dan elit yang sedia wujud untuk membantu mereka. Dalam hal ini Rejimen Gerak Khas (RGK) yang tertubuh sejak tahun 1971 dan beberapa kemungkinan Rejimen Khas Perisikan Tempur (RKPT) diberikan peranan yang selalunya terlalu asing daripada latihan, pendorongan dan peralatan yang dilengkapkan kepada mereka. Selalunya pasukan seperti ini diberikan tugas-tugas yang sedikit istimewa daripada keupayaan pasukan infantri sahaja. Sementara itu segala kurang kejayaan akibat dari penyalahgunaan tadi yang singkat dari kecemerlangan yang diharapkan sentiasa dikutuk dan diberikan tentangan yang kurang munasabah.

Organisasi unit-unit elit dan khas

diperkirakan demikian kerana latihan, kelengkapan dan peranan khusus yang diberikan kepadanya. Mulai tahun 1970, PGKM diperbesarkan kepada RGKM dan peranan unit tersebut telah ditambahkan, Skuadron atau Terup tetapi juga dalam kumpulan ronda. Latihan RKK dalam tindakan jarak dekat dan jauh telah diperhebatkan. Pegawai Memerintah pada kala itu sering membuat lawatan ke Markas Briged dan Formasi untuk menawarkan kegunaan unitnya dalam fungsi RKK, iaitu fungsi yang matlamatnya memerlukan teknik yang melebihi keupayaan sebuah kompeni repal infantri. Sungguhpun demikian aturgerak RGKM dalam fungsi ini boleh dibalang kerapnya jika dibandingkan dengan jumlah ia digunakan sebagai "Super" Infantri.

Sungguhpun tidak dapat dinafikan bahawa Tentera Darat harus menumpukan perhatian yang berat kepada formasi Divisyen dan Briged, tetapi kerap kali mereka gagal mempergunakan unit yang sedia wujud dalam fungsi yang sebenarnya. Tidak hairanlah betapa susahnya RGKM membuat justifikasi bagi mengekalkan bere hijau yang menjadi lambang pasukan elit.

RENUNGAN JAUH

Kekurangan perisikan tempur yang tepat akan berterusan pada masa akan datang bukan sahaja dalam operasi menentang penganas komunis tapi juga dalam peperangan konvensional, perisikan tempur amat penting di saat-saat teretusnya peperangan apabila tentera musuh mula mara dengan pantas dan berkekuatan. Di ketika inilah mereka akan menggunakan muslihat yang boleh mengelirukan pihak pertahanan dalam usaha mencari dan memusnah. Musuh akan bergerak pantas dengan menggunakan perlindungan bumi, cuaca dan samaran yang baik. Pihak kita yang serba kekurangan dengan kekuatan senjata bantuan dengan mudah boleh tepedaya dengan teknik pertahanan sendiri walaupun konsep operasi unit kecil diimplimentasi. Ketiadaan maklumat dan perisikan tempur yang semasa dan tepat di ketika ini akan menjadikan kedudukan dan

perisikan tempur yang kian kurang teguh menjadi roboh. Pemerintah pertahanan pada ketika ini juga tidak akan mendapat peluang dan kesempatan untuk melatih dan mengatugerak kumpulan ronda tinjau dengan secara "ad hoc" dan mendadak.

Pemerintah yang mengharapkan bantuan dari RGKM atau pasukan-pasukan khas bagi memenuhi keperluan mendapatkan maklumat perisikan pada waktu teretus peperangan yang berleluasan akan merasa kecewa. Pasukan seperti ini sudah pasti akan ditempatkan dan diatugerak untuk mendapatkan matlamat yang lebih strategik. Mereka tidak akan terlibat di dalam memperkirakan objektif Pemerintah Divisyen dan Briged yang bertanggungjawab terhadap kemaraan pihak musuh yang tepat di hadapan dan rusuk pertahanan mereka. Pendeknya Formasi Divisyen dan Briged harus memperkirakan penubuhan dan persiapan kumpulan RKK jarak jauh dan dekat mulai dari sekarang, daripada unit-unit yang organik kepada mereka supaya boleh diatugerakkan apabila situasi memerlukan.

Penubuhan kumpulan tinjau (RKK) yang organik kepada struktur formasi sendiri adalah lebih bermanfaat. Latihan, persiapan dan aturgerak boleh dirancang mulai sekarang dalam keadaan aman di suasana dan medan yang mungkin digunakan untuk bertempur di waktu peperangan yang sebenarnya nanti. Pemerintah dan staf juga perlu dilatih dalam corak dan bentuk mengguna dan mengawal kumpulan ini dengan berkesan.

PERBANDINGAN PENILAIAN

Tentera Russia dan negara-negara Blok Komunis telah lama memperhitungkan kepentingan kumpulan RKK jarak jauh. Tiap-tiap Batalion Tinjau (Recon Bn) dalam Divisyen Bermotor (Motorized Div) dan Divisyen Perisai (Armoured Div) mengandungi satu kompeni RKK jarak jauh yang berkemampuan digerakkan ke jarak 100 kilometer ke belakang garis FEBA. Tentera Russia juga mempunyai kumpulan RKK di peringkat kelolaan Markas

Tentera Darat yang dirancang untuk digunakan sejauh 350 kilometer ke dalam garis FEBA. Ahli-ahli kumpulan dipilih dengan teliti dan diberikan latihan jasmani dan psikologi yang tegas dan padat. Sasaran-sasaran mereka merangkumi pelantar senjata strategik, fasilita markas, aliran garisan perhubungan dan logi logistik. Mereka menghantar laporan mengikut giliran yang dirancang melainkan dalam kecemasan mereka akan menggunakan tramsisi radio yang singkat untuk mengelakkan daripada kedudukan mereka dikesan.

Sementara itu, Tentera Amerika Syarikat telah menubuhkan semula kemampuan ini, iaitu jurang kekurangan yang dialami dalam struktur tentera Daratnya selepas organisasi RKK (Long Range Recce Patrol) yang dimansuhkan apabila tamat peperangan Vietnam. Perkembangan permansuhan ini adalah akibat pengenalan alat-alat (gadget) pengesan yang dikhidmatkan kepada unit tempur. Pergolakan permansuhan ini juga telah mendapat tentangan hebat dari setengah golongan yang berpendapat bahawa Tentera Amerika Syarikat bergantung kepada alat elektronik dan akan menerima padah atas tindakan berasaskan elektronik hingga boleh melumpuhkan kekuatannya. Sungguhpun kejayaan yang banyak telah tercapai dalam pengalaman kegunaan RKK di perang Vietnam, namun unit-unit tinjauan khususnya seperti 75th Rangers yang dimansuhkan telah ditubuhkan semula. Tentera Amerika menyedari hakikat bahawa kekurangan dalam keupayaan RKK, serta batas-batas yang terdapat dengan kebolehan alat elektronik nescaya akan mendatangkan kesan buruk kepada keupayaan Tentera Amerika khususnya di peringkat permulaan pertempuran.

Negara-negara Bersekutu Atlantik Utara (NATO) di Eropah menyedari dengan hakikat positif terhadap faedah RKK. Tentera German mengadakan satu Kompeni RKK Jarak Jauh yang berkebolehan airborne bagi tiap-tiap formasi Kor. Negara Belgium mempunyai sel

RKK yang mutu latihan yang tinggi dalam kumpulan tim yang mengandungi 4 anggota tiap-tiap satunya. Tentera British mempunyai kumpulan RKK yang masyhur dalam unit SAS yang bukan sahaja dipuncakkan dalam peranan ini, tetapi Kumpulan RKK mereka juga dijadikan pakar dalam anti keganasan (Urban Anti Terrorist).

PERANAN

Kekeliruan sering berlaku dalam memahami tugas dan peranan kumpulan RKK. Komando dan Gerak Khas -Pasukan *Gerak Khas* mempunyai fungsi operasi berlanjutan hingga ke beberapa bulan atau tahun bersama orang asli atau tempatan, beratus batu di belakang garisan musuh. Anggota Gerak Khas merupakan pencari dan mengumpul maklumat serta pendidik yang lasak, bertanggungjawab melatih dan memimpin kumpulan gerila di bahagian belakang musuh.

Pasukan *Komando* dikenali sebagai pelaksana tugas-tugas yang pantas, kencang dan keras. Serang hendap, serangan mengejut dan menyelamat tawanan yang memerlukan kepintaran tempur dan keberanian merupakan sebahagian dari tugas-tugas pasukan Komando. Operasi seperti ini dilaksanakan di jarak tidak sejauh dari Markas Taktikal pihak musuh. Mereka ditarik keluar dengan secepat mungkin selepas tugas dilaksanakan.

Kumpulan RKK biasanya mengelakan pertempuran dengan musuh. Mereka bertanggungjawab untuk mendapatkan maklumat dan perisikan untuk ditindak oleh agensi yang lain. Keupayan tambahan boleh diberikan kepada kumpulan ini seperti mengarah dan mengawal senjata bantuan kepada sasaran yang diperolehi oleh mereka. Perkembangan teknologi dalam persenjataan yang berupaya pandu tepat (precision guided) membolehkan pemerhati bertindak dengan lebih meluas di belakang garisan musuh.

Maklumat tentang adanya kumpulan RKK bertindak di barisan belakang musuh

sudah pasti melibatkan sebahagian kekuatan musuh di aturgerak untuk bertindak dan berkawal dengan rapi. Ini adalah kerana selain dari tugas mengumpul maklumat, kumpulan RKK boleh diberi peranan tugas sampingan iaitu memusnahkan sasaran yang tertentu. Tugas ini boleh melibatkan kumpulan RKK dalam peranan sampingan seperti ini harus dipertimbangkan dengan teliti. Keutamaan di antara kepentingan sasaran yang perlu dimusnahkan dengan keselamatan kumpulan RKK harus diimbangkan. Masalah sudah tentu timbul tentang cara menyeludup dan keluar kumpulan ini ke kawasan sasaran yang bernilai.

Di dalam peperangan konvensional, RKK boleh menjadi kumpulan tinggal belakang (stay behind party) sebagai satu cara teknik operasi. Kumpulan tersebut bersembunyi dengan kemaraan musuh sehingga ianya terletak di belakang garisan hadapan musuh. Sekiranya keadaan peperangan mengelirukan, kumpulan tersebut boleh diseludupkan melalui darat, laut atau udara dan digunakan untuk memusnahkan sasaran penting. Tetapi sekiranya penyeludupan menjadi masalah dengan alasan situasi, maka RKK boleh digunakan untuk tugas yang kurang bahaya seperti mengumpul maklumat dan perisikan.

Ternyata bahawa penggunaan dan pengendalian RKK yang sempurna memerlukan latihan dan pengalaman kepada pegawai turus dan pemerintah tiap-tiap formasi. Tidak kurangnya, kumpulan itu sendiri perlu dilatih dengan tempo yang intensif. Pengetahuan staf tentang keupayaan dan batas kumpulan RKK dalam sesuatu medan operasi akan mendatangkan keyakinan kepada ahli-ahli ronda terhadap pihak yang menentukan matlamat mereka. Perkaitan seperti ini tidak akan terjalin dalam jangkamasa yang singkat. Ianya memerlukan kerjasama yang rapi dan jangkamasa panjang, dimulai dengan tindakan di waktu malam.

RUMUSAN

Jelas, bahawa matlamat tinjauan untuk mendapatkan maklumat dan perisikan tempur merupakan satu tugas yang rumit dalam tindakan operasi menentang pengganas dan lebih-lebih lagi dalam suasana dimensi peperangan konvensional. Kerumitan ini hanya boleh disingkatkan dengan adanya kumpulan RKK yang terlatih di medan perang yang telah dijangkakan, tetapi bukan dengan cara gubahan "ad hoc" melalui kumpulan ronda yang ahlinya didatangkan daripada kompeni repal biasa yang tidak terlatih.

Tentera Darat Malaysia sentiasa mempunyai bilangan kecil anggota yang mempunyai semangat dan minat untuk bertindak dalam tugas yang rumit dan bersendirian. Biasanya tugas seperti ini lebih memeransang kepada mereka dari tugas biasa yang selalunya dianggap membosankan. Daripada golongan anggota seperti inilah yang juga jelas mempunyai kualiti keberanian, bersemangat, bertatertib dan bertanggungjawab akan wujudnya ahli peronda dan peninjau yang boleh bertindak dalam keadaan yang genting dan mencabar. Jika anggota tersebut dilengkapi dengan alat perhubungan yang berupaya membuat transmissi di sebarang masa dan keadaan, mereka akan mampu menyalurkan laporan yang penting kepada pemerintah untuk bertindak.

Sumber maklumat dan perisikan yang wujud dari organisasi struktur formasi sendiri adalah penting dan boleh meningkatkan masa untuk bertindak. Mungkin dalam saat yang genting pemerintah tidak akan dapat mengharap maklumat perisikan seperti ini

daripada agensi yang lain.

Kepentingan maklumat dan perisikan tepat kepada pemerintah mengenai kegiatan musuh yang mempunyai daya gerak serta kekuatan, tidak dapat dinafikan. Oleh itu, sumber maklumat dan perisikan ini melalui kumpulan RKK bagi setiap formasi Divisyen dan Briged harus diperkirakan mulai dari sekarang - waktu aman, iaitu sementara waktu mengizinkan.



Lt Kol Che Hashim bin Ishak telah ditauliahkan ke dalam Kor gerak khas pada 25 April 1974. Beliau pernah mengikuti Kursus Special Forces Qualification di Amerika Syarikat. Menjawat jawatan Pengarah Di Jabatanarah Gerak Khas pada 1994. Kini sedang berkursus di Maktab Pertahanan Angkatan Tentera.

"The future readiness of the Army depends on how well the soldiers of today are developed into the leaders of the next decade..."

Gen Maxwell R. Thurman
(US Army)

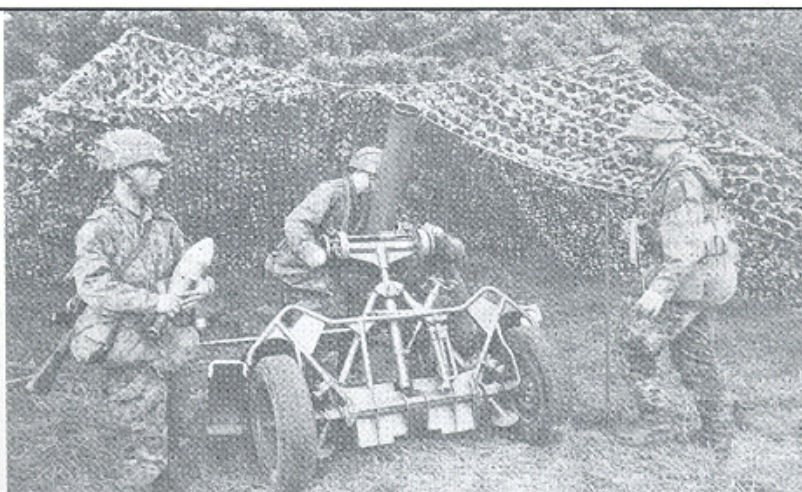
"Sovereignty that rest on guns cannot endure. Such a sovereignty, or dictatorship, must only be a temporary expedient in a time of upheaval"

Mustafa Kemal (Atatur K), 1930

THE 120 MM MORTAR

Kol Mohd Aris Salim

*Danish version
of the 120mm
heavy mortar.*



Introduction

The polemics of guns versus mortar has been going on for many years and still remains a good discussion topic among the gunners. To many of us, much of our knowledge about the 120mm mortar were obtained from sales brochures, weapon agents and from observing demonstrations and trainings held overseas. Knowledge of the mortar gathered through such means, though useful for the general understanding of the weapon, is definitely inadequate for the purpose of assessing its operational suitability within our environment.

In 1971 the writer, as the Senior Instructor-in-Gunnery in LATEDA, was involved directly in the firing trial of a 120mm smooth bore mortar brought in from overseas. The writer was responsible for the training of the mortar crew and subsequently for the planning and the conduct of the trial. A trial report was written and much of the facts about the mortar are still very relevant today.

Aim

Through this short article, the writer would like to share his knowledge and Malaysian experience on the 120mm mortar should ever the mortar becomes an item in our inventory.

General

The 120mm mortar is a widely used weapon system in the United States Army, some armies of the Commonwealth countries and of course, the Russian Army. The Malaysian Army first real encounter with the 120mm mortar was in late December 1971, when the Artillery Wing, LATEDA was tasked by the Artillery Directorate to conduct a live trial firing and evaluation of a 120mm smooth bore mortar. The evaluation exercise was over a period of about 2 weeks and involved both firing and mobility trials.

Based on the evaluation and current data available on the 120mm mortar, let us now look at some of the major facts about the mortar. In this article the trial firing and evaluation made in 1971 will be referred to as the "trial".

As a matter of interest much of the facts on the 120mm mortar are readily available in books in the market. Since many of us are familiar with the 105mm gun, some mentioned of the gun are made here purely as a basis of comparison.

Lethality

The Royal Military College of Science, Handbook of Ammunitions has this to say about lethality. "The word lethality is a dangerous word which is used widely in weapon systems assessment. On some occasions it has a very specific quantitative meaning, whilst on other occasions it has a very loose qualitative meaning." Lethality of a bomb depends on such factors as material of the bomb body, the amount of high explosive (HE) content in the bomb, height of burst, angle of arrival and remaining velocity. However to the layman, the HE content of the bomb appears to give some indication on the lethality of the bomb. This may appear to be so because the amount of blast and fragmentation produced is directly proportional to the amount of the HE content. The HE content of a bomb or a shell is measured in terms of capacity or Charge Weight Ratio (CWR). It is the ratio of the weight of the bursting charge to the total weight of a filled shell, expressed as a percentage. The ideal capacity is 40 percent, but a capacity of 25 percent is a good figure for optimum lethality. In the trial, based on the data presented by the manufacturer, the HE content of the conventional 120 mm bomb was about 2.39 kilogrammes (kg) giving it a capacity of about 17.4 percent. Current technology limits the range capability of a conventional round to about 9000 metres. Beyond that range the mortar must use the rocket-assisted bomb. To incorporate the rocket, the HE content had to be reduced thus reducing the capacity of the rocket-assisted bomb to about 14.1 percent. (The standard HE shell of the 105mm howitzer has a capacity of about 14.2 percent.) There

are manufacturers who claimed that their mortars have an HE content of 4.2 kg. However what is not certain is whether this HE content is for both conventional and rocket-assisted bomb.

Rate of Fire

The rate of fire contributes to the overall lethality of the system. Some manufacturers claim that their mortar can fire up to 18 rounds per minute in an emergency and 10 rounds per minute during a 4-minute sustained rate of fire. During the trial, using 4 ammunition numbers to load the mortar, only 8 rounds of bombs could be fired within one minute without relaying. To fire 10 rounds, relaying after every round, it took one minute and 44 seconds. (The 105mm Howitzer can fire 5 rounds in a minute without relaying and in excess of 3 minute to fire 10 rounds, relaying after every round.)

Mobility

Mobility is supposed to be the prime virtue of the mortar. The overall weight of a wheeled mounted, rifled mortar is about 600 kg and a smooth bore mortar weighs about 200 kg. During the trial, the mortar weighing about 150 kg, could easily be loaded into a standard 3/4 ton vehicle. Based on the weight and mortar configuration, it was assessed that 5 mortars could be carried by a 3-ton vehicle or a NURI helicopter and one mortar could easily be carried, stripped of course, in an allout helicopter. During the mobility trial the mortar was towed over a distance of 60 kilometres of normal road, 32 kilometres of estate road and 3 kilometres of cross country road. Over these short distances it was found that the mortar took to the road and the track very well travelling at a speed of 70 kph on the normal road and 40 kph on the estate and cross country roads. There are manufacturers who claimed that their mortar weighing about 600 kg, can be handled by 3 men over a short distance. The writer's experience with handling a smooth bore mortar positively found that the mortar, which weighed less than 200kg, cannot be easily man handled to a tactical distance by the crew. During the trial, the following facts were recorded:

* The barrel assembly, weighing 44 kg, can be lifted by one man, but required 2 men to carry it even for a short distance.

* The bipod assembly can be easily carried by one man. It weighed 24 kg.

* The base plate, weighing 36 kg, was a good two-men lift. Because of its awkward shape for a distance of 100 metres the plate must be slung on a pole.

* The wheeled carriage, weighing 40 kg, can be easily handled by one man.

* Mobility also includes the ability of the weapon to come out of action quickly. During the trial, the mortar was fired from the R2 gun position in Asahan Range. This position was chosen because the ground represented the normal ground found in most of the operational areas. After firing a few charge 5 and 6 bombs, the base plate bedded itself 3.5 feet into the ground. Using digging tools and the land-rover winch it took the crew a good 30 minutes to extricate the mortar out. This case was not peculiar to the trial. Technical books on weapon system, such as Ryan's "Gun, Mortars and Rockets" acknowledged that "the quick removal of mortar base plates after firing is often difficult." There are, however, wheeled-mounted mortar which its manufacturer claims can come in and out of action very quickly.

Accuracy

In layman's term accuracy is defined as the spread of the main point of impact (mpi) about the target and is measured in terms of the probable error (PE), either in range (r) or in

deflection (d). A PE of 20 metres means that there is a 50 percent chance that the mpi of a weapon will be a 20 metres plus or minus of the target and a PE of 5 metres means that the mpi will be 5 metres either left or right of the target. A small PE indicates good accuracy. Consistency, on the other hand, is the measure of the spread of rounds around the mpi. A weapon is said to be consistent if the rounds fall in similar pattern around the mpi at each firing. A consistent weapon does not mean an accurate weapon.

All users of weapon system, particularly indirect fire weapon system, must pay particular attention to this PE. It is usually given in the firing tables. In operational firing the safety distance for defensive fire (DF) targets is worked out based on this PE figure. During the trial, the mortar was found to be very consistent. However when studying the PE it was found that the PE is quite big. At a range of 6000 metres, the standard bomb PE was 37 metres and PE of 14 metres whilst the rocket-assisted bomb had a PE of 45 metres and PE of 15 metres. Given this figure, the average 100 percent zone of the mortar (commonly referred to as the beaten zone) is 328 metres in length and 116 metres in breadth. (Over the same range the 105mm Howitzer has a PE of 20 metres and PE of 3.5 metres giving it a 100 percent 3 zone of 160 metres in length and 28 metres in breadth.) All mortars, irrespective of smooth bore or rifled, have big PEs.

It was also observed during the trial that the bedding-in round, fell up to 200 metres short of the target. This was due mainly to the instability of the base plate.

The Ammunition

The 120mm mortar is not light. During the trial it was found that the weight of a standard bomb was 13 kg and the rocket-assisted bomb was 15 kg. A box containing 2 bombs was found to be about 50 kg. (The weight of a box of 105mm ammunition is also 50 kg.) Currently mortars fire only HE bombs with ground burst fuzes, smoke and illuminating bombs.

The Range

One fact that manufacturers like to exploit in order to promote their mortar is to say that a mortar can fire far yet without any significant increase to the weight of the weapon. The 120mm mortar that was put on trial could achieve a range of 5000 metres using the conventional bombs and a range of 8300 metres using the rocket-assisted bomb. The writer has looked into the datas of 23 mortars and the furthest range that could be achieved by a smooth bore mortar, using a conventional round is 9.2 km while the only rifled mortar using Rocket Assisted Projectile (RAP) has a range capability of 13 km. Weight of the rifled mortar is three times the weight of the smooth bore.

Being a high trajectory weapon, there is a limit to a mortar's capability to elevate itself. This limitation effects its ability to engage targets at short ranges. The 120mm rifled mortar, for example, cannot engage targets below about 1000 metres. Other smooth bore mortars can shoot down up to 300 metres. (The gun however, can engage targets up to 100 metres in the direct fire role.)

Charge Overlap the Range Capability

During the trial, it was found that for ranges beyond 5000 metres, the rocket-assisted bombs must be used. Charge 3 has a range capability of 4000 to 5750 metres, charge 4 from 5300 to 6720 metres and charge 5 from 6500 to 7520 metres. From this data the charge/range overlap between charge 3 and 4 was 450 metres and between charge 4 and 5 the overlap was 220 metres.

Troops' Safety

In an assault, the safe splinter distance is used to plan the time at which covering fire will be lifted from scheduled targets. This splinter distance is defined as that distance from the burst of a projectile beyond which there is an acceptable degree of risk of casualties to unprotected troops. This distances can be halved if the troops have overhead protection or are

in armoured fighting vehicles (AFV). Based on current data available the safety distances are as follows:

* 81mm mortar	200 m
* 120mm mortar	350 m
* 105mm gun	250 m

For defensive fire (DF) targets, an allowance is added to the safe splinter distance. This allowance is to compensate for errors in prediction. DF planning distances of a few weapon are as follows:

* 81mm mortar	550 m
* 120mm (smooth bore at 8 km)	500 m
* 105mm gun	400 m

Tactical Considerations

After going through some of the major facts about 120mm, we will now proceed to discuss the tactical implications of these facts within the context of the principles of war.

The Aim

It is the aim of a close support artillery to provide effective intimate fire to the supported arm. Within the context of fire support, 'effective' implies that the fire support given arrives accurately at the right time, at the right place and in the right proportion. 'Intimacy' means that assaulting troops can get their fire support quickly and they can advance as close as possible behind a covering fire right up to the objective with minimum risk of being hit by our own mortar splinter.

The safety distance of the mortar cannot enable the troop to come closer than 350 metres from the line of fire. This means that the last 350 metres of the assault will be done without mortar covering fire. However with overhead protection, for example, mounting the troops in AFVs, troops can come in as close as

175 metres from the line on fire. (With 105mm guns, troops with overhead protection, can come as close as 125 metres from the line of fire.) For DF targets, the mortar can engage safely targets that are not nearer than 500 metres from our own troops. Any closer than that would increase the risk of round falling onto the troops. In the case of the 105mm guns, the DF can be as close as 400 metres. In terms of intimacy, the mortar is a suitable close support weapon for troops with overhead protection or in armoured personnel carriers (APC). It is quite pertinent to point out here that in terms of distances 50 or 100 metres may not appear to be significant figures. However when that differences are translated into exposure times to enemy direct fire weapons, the casualties suffered can be significant. In the four minutes to cover 100 metres, one enemy machine gun can deliver 4000 rounds of bullets at the assaulting troops.

Effective fire also means that a weapon must be accurate. Based on the PE, the mortar's accuracy is much inferior to that of a 105mm gun. A large PE means that the fire of the mortar cannot be easily concentrated on to a small target like an observation post or a machine gun emplacement. To increase the probability of a hit onto a small target, the mortar must fire a large number of bombs. As an area neutralising weapon against troops in forming up positions, administrative areas and mortar or gun positions, the 120mm mortar is a very good weapon system.

In providing the effective intimate fire support the artillery also aims to achieve first round accuracy on the target at predicted fire. Because mortar is designed with simplicity and lightness as prime consideration, the mortar system therefore does not have the supporting system to enhance its overall accuracy in delivery. Being a high trajectory weapon with very long time of flight, the mortar bomb is very much affected by the meteorological changes in the atmosphere. As a result, predicted mortar fire is not accurate. The total PE for delivery, including the errors of survey, calibration and meteor, will be very much bigger than the PE of the mortar as given in the firing table. To achieve

effectiveness, mortar fire needs to be directed by an observer. Predicted fire should only be used in harassing fire tasks. The lack of accuracy inhibits the mortar to engage effectively targets that require linear distribution of fire. The wide dispersion of the rounds will cause gaps within the linear which will make the fire ineffective.

The technical ability of mortar to fire a high rate of fire does not tactically mean that the mortar can deliver the right proportion of fire to the target. Crew fatigue can negate the high rate of fire capability. Ryan, in his book "Guns, Mortar and Rockets" wrote that "the limit to the rate of fire of a mortar is dictated, in theory at least, by the time between the action of dropping the bomb down the muzzle and the departure of the bomb from the mortar. Some claims put this rate as high as more than 30 bombs per minute but obviously crew fatigue would eventually degrade very high rates. Clearly several things such as the calibre of the mortar, the size of the crew, and the length of the bomb and the barrel will affect both the maximum and sustained rates."

Effective fire requires the mortar to be properly aligned in range and deflection before every firing and this alignment process takes time. Before a bomb is loaded into the barrel, crew members need to ensure that the barrel is clear of obstruction and that the previously loaded round has actually been fired off. Therefore the tactically practical rate of fire must be consistent with the accuracy of fire required, the ability of the crew to sustain the firing, the safety of the crew and the ability of the logistic support to provide the ammunitions. The maximum rate of fire as given in sales brochure cannot be used for the purpose of operational planning.

Speed in redeployment is another essential ingredient for the attainment of the aim. Lightness of the mortar alone does not give the mortar the necessary mobility for redeployment. The time to dig out the embedded base plate may take a long time and may also endanger the mortar against an effective counter-mortar fire from the enemy. The time

to move the heavy ammunition is part and parcel of the redeployment time. Ryan, in his book "Guns, Mortars and Rockets" wrote that the strain on the ammunition resupply system *"is often overlooked by those who extol the mobility virtues of mortars. Because the successful resupply of ammunition is often dictated by the mobility of the transport used for the task, this dimension of the overall system's mobility should be remembered when comparing it to other systems."*

Morale

Morale is the intangible factor in war. It is not easily quantifiable nor is there a standard method of measuring morale. However confidence in the capability of an equipment can enhance one's morale. Among troops there is currently a greater feeling of confidence in the gun than in the mortar. This is understandable because the gun have proven itself over the years and also the gun's technical data available to the troops shows that the gun is more accurate than the mortar and also the gun is more difficult to detect than the mortar. This belief in the superiority of the gun may affect the confidence of commanders on the capability of mortar. However this apparent lack of confidence can be overcome through training and understanding of the capability of the mortar. The advantages of the mortar can be fully exploited by well-trained crew and competent planning staff officers.

Offensive Action

The lightweightness of the mortar, especially the light smooth-bore, makes it a very suitable weapon for quick deployment in response to a threat. Its ability to deliver a high rate of fire onto an area target can demoralise the enemy. However this quick response must be supported by a reciprocal response of the logistic system to move the ammunition to the base plate position. Staff officers planning the deployment of mortars must make detailed planning for the ammunition requirement of the mortars.

Surprise

It is very difficult to achieve firing surprise with mortar. Firstly mortar needs to be bedded in. Bombs fired during the bedding-in process can easily be located by enemy mortar locating radar. Secondly mortar does not possess the supporting elements to enhance its overall accuracy in delivery. On the other hand, due to its small size and simplicity in design, mortar can be easily concealed and camouflaged during travelling and deployment thus making its presence unknown until the required time of firing. This capability of the mortar must be exploited by the planners.

Security

The bedding-in rounds fired from a mortar not only will give away its position but will invite massive counter-mortar fire from the enemy well before the mortar could engage on its primary mission. Engaging targets without firing the bedding-in rounds endanger the safety of our troops. Bedding-in, therefore, must be done at very last practical moment.

Safety of our own troops will also be affected by the big splinter distance and the big beaten zone. Because fire needs to be lifted early, troops will be exposed to enemy fire for much longer period. Normal adjustment procedures need to be modified. The "Creeping" process of adjustment, especially when troops are very close to the target needs to be adopted. Other forms of more fire support, possibly direct fire support weapon must be made available to the assaulting troops when the mortar lifts its fire.

The mortar that was evaluated had a very small charge overlap between charges 3, 4 and 5. One major implication of this small charge overlap is that when engaging a target around the affected ranges; the command post officer must be aware of the necessity to order changes to charge used for even a small correction in range. Failure to do so can cause heavy casualty to our own troops. This frequent changing of procedure to avoid such mistakes needs to be devised.

Survivability of the mortar against counter-mortar fire is achieved by rapid redeployment or firing from behind steep slopes. However, the tendency for the mortar to embed itself deeply into the ground can nullify its characteristic of mobility.

Co - operation

Co - operation is looked at in the context of exchange of data. Within the gun system there exist procedures that enable data from one battery to be circulated and used by others. For example a target grid that has been obtained as a result of firing can be subsequently used by other batteries. The mortar system does not possess this procedure. Coordination of target data between mortar / mortar and mortar / gun can be very difficult especially where it involves several fire units. Employment and deployment of mortars, therefore must take this factor into consideration or a procedure be created to overcome some of the inherent problems of compatibility of data.

Economy

Low cost in terms of buying and maintenance, is one major advantage that the mortar has over the gun system. The simplicity of the mortar design makes maintenance easy and subsequently cheap. However, rocket - assisted bombs are not cheap because the technological cost to make such a bomb is expensive. Due regards must be paid to this cost factor. Without rocket - assisted bombs, the mortar can only achieve a range of about 9km. Generally smooth bore mortar is cheaper than the more complex rifled mortar.

In terms of cost-effectiveness in movement, the advantage of the mortar insignificant only when the movement asset is limited and even then only in the transportation of the mortar bombs is the same to that of moving the guns ammunition. Where transportation asset is not a problem, the mortar does not have any significant advantage over a gun.

Flexibility

The 120mm mortar is not as flexible as the 105mm gun in terms of operational capability. This is borne by the facts stated below. These facts are by no means an attempt to degrade the mortar but rather they are meant to remind the operational planners that they must not expect the mortar to do the job of a gun. Use the mortar for what it is best suited for. These facts are:

- * A mortar can only fire in the high angle and has no direct fire capability. A gun has both high and low angle fire capability. This enables a gun to engage targets in the direct fire role as close as 100 metres and with its high angle capability, can engage targets behind hills.

- * The big PE of the mortar does not make it a suitable and economical weapon for the engagement of small target although it can engage small targets without expending much ammunition and also by using range and lateral spread techniques a gun can easily cover a big area.

- * Current technology enables a mortar to fire up to 13 km. 105mm gun can fire up to 17 km thus enabling the gun to increase the commander's area of interest to that range. At the same time a gun can fire in the direct fire role to the safe limits of the splinter distance.

- * A mortar cannot achieve surprise in firing because of the need for bedding in and also because predicted mortar fire is not accurate.

- * The mortar is not accurate with time fuzes and not very effective

on linear concentrations.

* The current procedures and systems within the gun system enables a gun to engage any target within range effectively. A target adjusted by one battery can be engaged by another regiment and target data is extremely limited.

Concentration

The 120mm mortar, especially the smooth - bore, can be deployed very quickly thus making it easy to group in a locality. In terms of fire concentration, as a battery the mortar can provide concentration fire onto area targets. However, as a regiment the mortar will face technical problems of putting in an effective regimental concentrations onto an area target. This is due to the fact that target data obtained by one battery cannot be effectively applied by another battery. Also at the maximum range of 13 km the rounds from each battery will be so dispersed that effective concentration of fire onto targets may not be attainable. To achieve regimental concentrations, each mortar battery may have to be adjusted separately onto the target, a procedure that is time consuming.

Administration

The 120mm is a very simple piece of equipment to maintain in the field. It does not require sophisticated procedure for stripping and assembling of its parts. Its ammunition support, however, requires the same attention as ammunition support for the 105mm gun. The ability of the mortar to perform its role effectively is to provide the ammunition at the right time, right place and in the right amount.

Conclusion

It is always the intention of a commander to dictate the battle to the enemy. This can be achieved if the commander can put his combat power at the right place, at the right time and in the right quantum. Fire power is one of the tangible elements of this combat power. Effective placement of the fire power contributes significantly to the ability of a commander to dictate the battle to the enemy.

The 120mm mortar as a source of fire power has some limitation in terms of accuracy, safety, flexibility and mobility. These limitations will have to be properly considered by staff officers planning an operation. The mortar must be employed in the role it is best suited for and its virtues must be fully exploited by those planning the operations. The mortar's suppressive fire capability makes it a very good weapon system against group targets and also to supplement the fire of the guns. The terms "lightness", "mobility" and "high rate of fire" frequently thrown around by certain people must not be looked at in isolation. Mortars that try to achieve the capability very close to that of a gun, is no longer simple, light and cheap.

There are some limitations in the employment of mortar due to inherent technical limitations within the mortar system. The solutions to such problems may have to be found in tactics or in operational procedures. Whatever its limitation, the mortar has a place in the modern battlefield.

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Kol Mohd Aris bin Salim dari Kor Artileri kini bertugas sebagai Komander Divisyen Artileri. Beliau telah banyak menghasilkan tulisan-tulisan yang telah diterbitkan di dalam journal ini dan artikel-artikel beliau di dalam edisi ke 19 dan 25 telah dipilih sebagai artikel terbaik. Kol Mohd Aris juga telah berkhidmat di bawah PBB di misi United Nations Transitional Authority- Cambodia (UNTAC) pada 1992.

"..... a mercenary army is one primarily motivated by incentives or pay offs, while a patriotic army is composed of soldiers who have adopted as their own the values and norms of military action. Ordinarily, given relative weapons equality, I would be on patriotic army's victory in any combat against a mercenary army"

Robert Dubin

(M A F C A)

Lt Kol Annuar bin Ariffin



AN OVERVIEW OF 'MALAYSIAN ARMED FORCES CATALOGUING SYSTEM'

"The quality and effectiveness of the logistic support system depends on a set of factors that contribute to such effectiveness. It is not enough to have abundant stocks; their geographical location has to be such that the user can have easy and swift access to them. The uniformity of a language between the user and the distributing bodies must be established and the automated distribution and re-supply system must operate flawlessly. None of this would be possible without a codification system like the one that is used in NATO and that has established this uniformity of language for the benefit of all"

MANFRED WORNER
SEC GEN NATO

INTRODUCTION

Prior to the introduction of the Malaysian Armed Forces Cataloguing System (MAFCAS), each of the three Services Army, Navy and Air Force operated its own cataloguing system. All however, had one feature in common, numbers were allotted on the basis of the part numbers given by the manufac-

turer of the item being purchased. Each new manufacturer's part number coming into the system was given a new Service Number. A spark plug, for instance, of given size and performance rating can be manufactured by a dozen different manufacturers and each one is given a different part number. The result was that a spark plug could be held in a service Supply System under a dozen different Service numbers, where as we know that spark plugs which are completely interchangeable ought to be held under one Service Number irrespective of the manufacturer.

The situation was further complicated by the fact that manufacturers of equipments frequently purchase components from other manufacturers and give these components their own numbers. Thus an item produced by one manufacturer could be sold to many other "end-item" manufacturers to produce many more "manufacturers part numbers", and eventually many more Service Numbers. It will be readily appreciated that thousands of items in a single supply system can each have many Service Numbers.

To sort the above chaotic situation was one of the major reasons for setting up MAFCA.

DEFINITION

To understand the Cataloguing System, we must first of all understand what is meant by "cataloguing". This word tends to evoke a mental image of a book - a catalogue. But this need not necessarily be so. In a public library holding thousands of books, the catalogue is housed in the library generally in the form of a card index file. As each new book is introduced it is "catalogued". A new card is made out, a number is given to the book to simplify the task of finding it on the shelves, and the card is added to the file.

This is the process of cataloguing. When a new item enters a system, whether it be a library, a retail store, or the supply system of the Malaysian Armed Forces, it is given a number which "identifies" it. This number is used obviously for storage purposes; it is easier to "file" goods in a warehouse or store, locating it by number is relatively simple. This number also simplifies the problems associated particularly in the use of computers as well as for accounting, stocking, issuing, disposal, etc.

Of course, allotting a number to the item is not enough; a record must be kept from which the number can be determined from other data relating to the item, the title of the book and the name of the author. This record can be in book form, loose-leaf form, card index form, and today even in computer disc format or any other computer media. There is nothing to prevent this record existing in more than one form, if held on computer disc regular "print-outs" of all the information held can be made available. From the record not only can the number of the items be determined from other data, but all known information relating to the item can be determined from the number.

The first step in any cataloguing system, therefore, is to allot a number to each new item entering the System. This may appear to be a very simple procedure, but since the entire supply system of any organization is based on this number, it would be most

unwise not to exercise some control over the allotment of the numbers.

BACKGROUND

MAFCAS. MAFCAS is basically the NATO Codification System (NCS), modified where necessary to meet the Malaysian defence requirements. The NCS in turn is based on the United States of America Federal Catalog System (FCS). It is a combined classification and identification process that all members of NATO and some other countries have agreed to use in identifying their military equipments, and in some cases, have applied to their civil inventories.

Malaysia As A Member. Whilst not a member of NATO, Malaysia is accepted by the NATO countries as being a "friendly foreign nation" participating in the NCS and as such is permitted to establish agreements for the exchange of cataloguing data and services with other participating countries. Each participating country has established a National Codification Bureau (NCB) which is responsible for controlling and co-ordinating the implementation of the NATO System in its own country, and in maintaining cataloguing data relevant to the equipment it produces and procures from other countries to meet, particularly, its defence requirement.

ORGANIZATION

The Malaysian Armed Forces Cataloguing Authority (**MAFCA**) has been established within Department of Defence Logistic (BLP). MINDEF is to initiate, develop, control and co-ordinate the implementation of MAFCA System. Within Malaysia, MAFCA has been designated as the single point of contact with the other participant countries in the NATO Codification System for the exchange of international cataloguing data and services; it is therefore the Malaysian National Codification Bureau (NCB) for such purposes. In its capacity as the adviser and provider for the system as well as data pertaining to cataloguing, MAFCA is also included in the following MINDEF committees:

- * MINDEF Computerization Project.
- * Specification Committee.
- * Projects for "Special Capital Equipment" purchases.

Services Cataloguing Cells. Each services has its own cataloguing cells in order to implement MAFCAS within its respective service. These cells are the points at which items are identified physically and submissions for cataloguing tasks are forwarded to MAFCA for further verifications, screenings and collaborations within the three services. For this reason these cells are presently directly under the command and control of the Commanding Officers of each Ordnance/Logistics/Supply depot. However, for the actual cataloguing tasks, they adhere to the policy and guidelines as issued by MAFCA as the central authority. These cells have direct computer links to MAFCA to enhance and expedite cataloguing tasks.

POLICY

The principle guidelines governing the policies, procedures and responsibilities of MAFCAS is the Armed Forces Council instruction No 9 of 1982.

The Director of MAFCA is responsible to the Assistant Chief of Staff(Logistics) for the day to day operations of the system and to the Chief of Staff, HQ Armed Forces for the expeditious pursuit of policy and compliance with directives. Director of MAFCA also gets his directives and guidelines from the Cataloguing Steering Committee (CSC). The CSC normally meet every 3 months chaired by ACS (log) and represented by the Director of Ordnance Services, Director of Naval Logistics and Finance and Director of Air Force Supply and Finance as the representative from each respective services.

Within MINDEF, Director MAFCA exercises his jurisdiction on behalf of the Chief of Staff. However, outside MINDEF and with other NCBs, MAFCA is allowed to act independently as a full pledge NCB and has been granted permission to use

its own letter-head. The signing of bilateral agreements with foreign countries Secretary General Ministry of Defence or the Chief of Staff, HQ Armed Forces.

The above policy relationship is illustrated diagrammatically as shown in figure I.

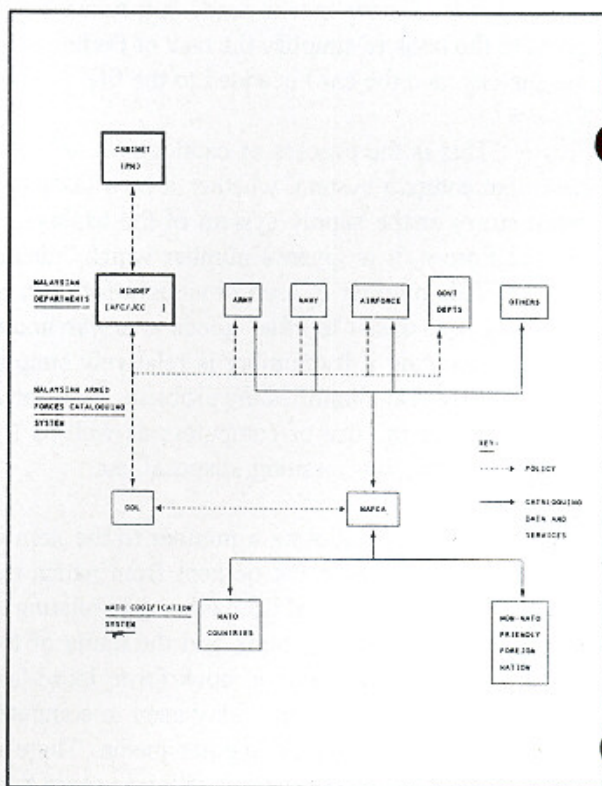
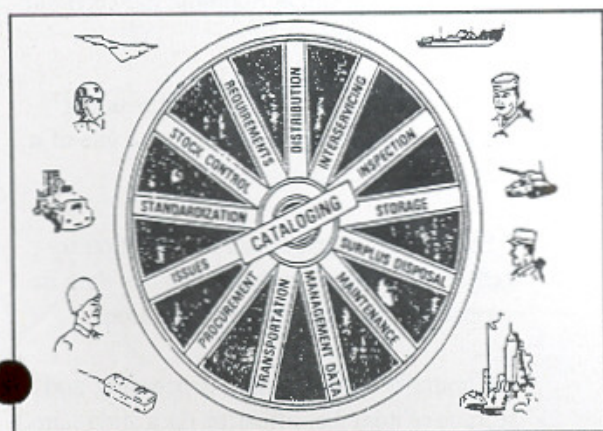


FIGURE I. Policy Relationship

OBJECTIVE

The aim of MAFCAS is to establish and maintain a common supply language within MINDEF, between MINDEF and other departments participating in the system, and between Malaysia, NATO countries participating in the NCS. The final objective of MAFCAS is to establish a centrally controlled and centrally maintained

database for use by the MAF logistics system. This final objective is best explained by this chart below:



NATO CODIFICATION SYSTEM

History. Originally, the system was developed by the US Navy and was eventually adopted in an improved version by the US Army, Air Force and Marine Corps, as the Federal Catalogue System. By law, the new system was imposed on all US Federal government departments, civilian and Services. Britain and Canada adopted the system in the very early stages, and in 1958 Australia decided to introduce the system as the Defence Cataloguing System. With the formation of NATO, the FCS was adopted for use by all NATO nations as the "NATO Codification System". All nations which are signatories to the pact use the System with slight modifications to meet national requirements. The System is also used by many non-NATO nations; Australia, New Zealand, Singapore included. These non-NATO participants are officially known in NATO circles as "Friendly Foreign Nations".

What is NCS. The NATO codification System (NCS) is a uniform and common system for identification, classification and stock numbering of item of Supply of the NATO countries. It is designed to achieve maximum effectiveness in logistics support and to facilitate materiel data management. The

System has been agreed by all signatories of the Alliance for use in identifying equipment and supplies. The principal document of the System is the Allied Codification Publication No 1 (A Cod P-1), also known as the NATO Manual on Codification, which describes the system operating procedures. In its military application the System has been accepted under 2 NATO Standardization Agreements - STANAG 3150 (Uniform System of Supply Classification) and STANAG 3151 (Uniform System of Item Identification). The system, which is based upon the United States Federal Catalogue System, is also used by the Civil Departments of some NATO countries. It is governed by the NATO Group of National Directors on Codification (AC/135) and implemented by the National Codification Bureaux (NCBs).

Objectives. The principle objectives of NCS are:

- * To increase the effectiveness of the logistics system.
- * To facilitate data handling.
- * To minimise logistics costs of user nations.
- * To increase efficiency in logistics operations.

Use of NCS

* The establishment, operation and maintenance of the NATO Codification System provides a uniform identification language for use within national activities (eg supply management, standardization etc) and among member countries.

* Its use is based on the principle that responsibility for codification of an item rests with the country of manufacture of the item, even if the item is not used within that country. In these circumstances the purchasing country has to request codification action from the producing country.

* For items produced in more than one country, stock numbers can be assigned outside the producing country by the NATO Maintenance and Supply Agency (NAMSA). For codification of items produced by manufacturers not located in NATO countries, special rules will apply.

Benefits of The NATO Codification System

* The NATO Codification System furnished accurate information as to the identity of an item; it permits recording of the sources of supply and provide other management data. It simplifies the solution of supply data management problems by providing quick responses from a single up - to - date source.

* The use of the NATO Codification System as a basis for supply system also permits:

* Improved determination of material requirement and budget in through greater knowledge of items in stock.

* Effective coordination in procurement by helping to eliminate concurrent buying and selling of the same item.

* Effective use of assets by enabling supply support interchange between linked organisations and between countries.

* Reduction of inventories, storage spaces, record keeping and personnel through the elimination of duplicated items.

* Improved surplus and excess material disposal operations through the uniform identification of each Item of Supply.

* Enhanced opportunities for standardisation, by revealing the

different varieties, types and sizes of items in the supply systems.

* Simplified technical dialogue between participating countries.

* Improved Government-industry understanding and relations, through the use of a single identification systems.

* Storage of management information together with technical/performance data in support of various logistics functions.

* Computer transmission, processing and storage of item identification data and related management support data in easily accessible data base.

Non - NATO Participants

* Non - NATO participants, such as Malaysia, are admitted to the NATO System as there is much advantage to be gained by spreading the common supply language as far as possible. However, before a non-NATO country can participate it must be sponsored by a NATO country - Malaysia was sponsored by U.K. in 1981.

* All non-NATO participants are accorded with the same services as a NATO country but they are not represented on NATO panels and rarely asked for comments on any matter. Sometimes NATO country may ask a non-NATO country for its views as was the case when the USA was redesigning the H6 series. Also Heads of Non-NATO participating NCB's may be Invited to NATO Symposia as observers.

Role of The USA. The USA role in NCS is extensive. For example the USA Handbooks are used throughout NATO and non-NATO participating nations as is the processing procedures. DIC's, DRN's etc; all begun in the USA. The USA put forward to NATO most of the system enhancements which are in use today.

Member Countries. Present members of NCS as listed below:

NCS MEMBER COUNTRIES

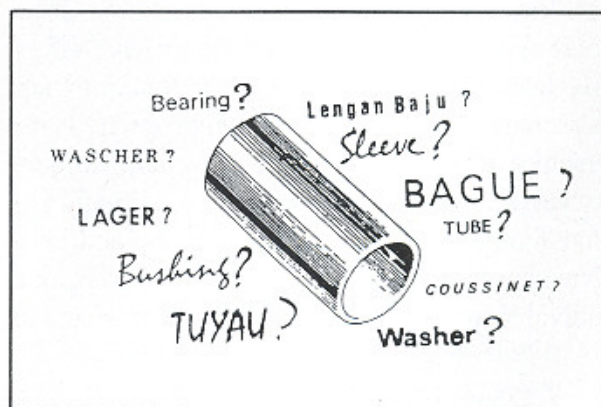
Argentina	NATO HQ
Australia	Netherlands
Belgium	New Zealand
Canada	Norway
Denmark	Pakistan
France	Phillipines
Germany	Portugal
Greece	Singapore
Iceland	Spain
India	S. Africa
Iran	S. Kórea
Israel	Turkey
Italy	U.K.
Japan	USA
Luxembourg	Brazil
MALAYSIA	Rep. of China

Element of The System. There are four main elements of the NCS and they are described as below:

**Item Name.*

* We have seen in the ensuring paragraphs what the aim of the system is. Just how is this single Stock Num-

ber concept achieved? In system the "cataloguer" or "codifier" prepares a description in words. The first essential in any description is the name by which the item is to be known. To ensure that all participants use the same item an alphabet index of names has been prepared. Choice of the correct name for the item is important. A word description of the physical and performance characteristics follows. The system is designed to ensure that all participants, in describing any single item, will describe the same characteristics in the same order and using the same terminology. Thus for the same item, all participants will produce identical descriptions. These description are filed alphabetically by description in a Master file. It is a simple matter to compare a new description with existing descriptions to determine whether or not the same description already exists in the System. If a match is found, the "new" item will be given the existing number. If no match, a number is allotted.



(Continue, please turn to page 58)

(MAFCA- continue from page 35)

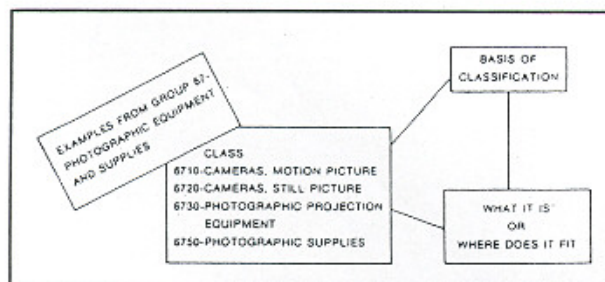
* To ensure uniformity, MAFCA employ as far as possible item names approved by the NATO countries, supplemented where strictly necessary by names approved by the MAFCA to meet particular Malaysian needs.

* A single name is selected and approved for use for each commodity item or range of commodity items which for logistics purposes is established as being different from all other commodities in the system. Where possible industrial and commercial names are used if they have a uniformity accepted definition.

* An item can be identified by it, irrespective of the language in which the name is written. A common coding system has been adopted by all NATO countries and is used by other countries participating in the NCS.

* Supply Classification.

* The number and scope of items of supply in the Services inventories make impracticable to manage these inventories on an item-by-item basis. Family groupings or classifications of item required to be established to provide manageable segments.



* The NATO Supply Classification provides a uniform system of classes, so devised that no one item of supply can be classified in more than one class-there is no overlapping. The structure of the classes is based on "what the item is" or "where the item fits", ie the application. Classification by application is used primarily for equipment and machinery and includes provision for items specially designed for use on or with a particular assembly. The classification code has four digits, of which the first two digits represent a group, the second two digit represent a class.

* Stock Numbers.

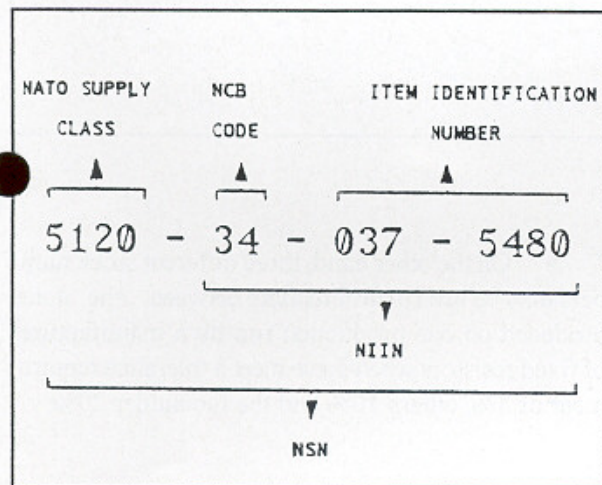
* The description of the item-of supply concept which has been named, described and classified in accordance with MAFCAS procedures and rules, is assigned a Stock Number which is the "key" to facilitate identification and recording of the item-of supply concept in documentation, accounting, records, etc.

* The internationally agreed format of National Stock Number is thirteen digits in which the first four - represent the Supply Class, the fifth and sixth digits - the code of the NCB assigning, and the seventh to thirteenth digit-Item Identification Number. The combination of fifth to thirteenth digits constitutes the National Item Identification Number (NIIN).

* Whereas the thirteen digit format Stock Number may be referred to in sundry places as NATO Stock Number (NSN), Federal Stock Number (FSN), National Stock Number (NSN) and Defence Stock Number (DSN), they all comply with international rules for formatting and are synonymous with

Malaysian Stock Numbers (MSN). In general the term that is usually used to state this number is the "NSN".

* For clarity, an NSN is always written with hyphens between the classification and the NCB code, the NCB code and the item identification number and between the third and fourth digits of the item identification number.



* Item Identification

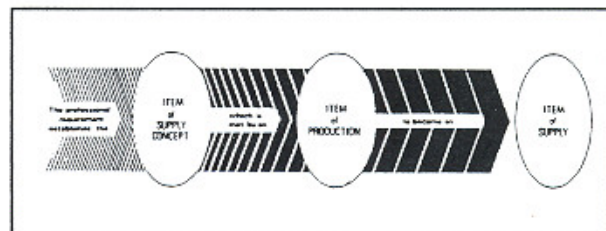
* The most important element of the MAFCAS is the identification system, because it establishes a unique identification for every item of supply likely to be repetitively procured by any department.

* An understanding of the three terms "item identification", "item of supply", and "item of production" is essential to the identifying process under the MAFCAS.

* An *ITEM IDENTIFICATION* expresses the concept of the item of supply for technical and supply management purposes. It consists of the minimum data necessary to establish clearly the essential characteristics of the item of supply which differentiates it from other items in the supply system, enabling allotment of a unique stock number to the item.

* An *ITEM OF SUPPLY* is any thing or collection or assemblage of things handled in the logistics system of a department under a unique stock number.

* An *ITEM OF PRODUCTION* is any thing or collection or assemblage of things produced under controls exercised by the manufacturer and to any special requirements of the customer, initial and subsequent manufacture bearing to the same engineering drawing and/or specifications and inspection to produce item which for the customer's purpose are identical.



* During either initial or subsequent procurement, an item of production becomes an item of supply when it physically enters the supply systems against the appropriate stock number. Conversely, if an item of supply is so modified as to affect the concept of the item in the item in the supply it reverts to the status of an item of production to re-enter the system as a new item of supply against an appropriate item identification. Any part or grouping of parts from a collection or assemblage may also be considered an item of production and becomes an item of supply against an appropriate item identification. Within the limits and tolerance established by the concept, an item of supply may be:

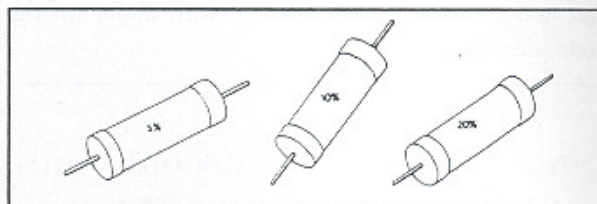
* A single item of production.

* Two or more items of production which are identical terms of use;

* A more precise item of production, such as a close tolerance item, selected from a normal production run; or

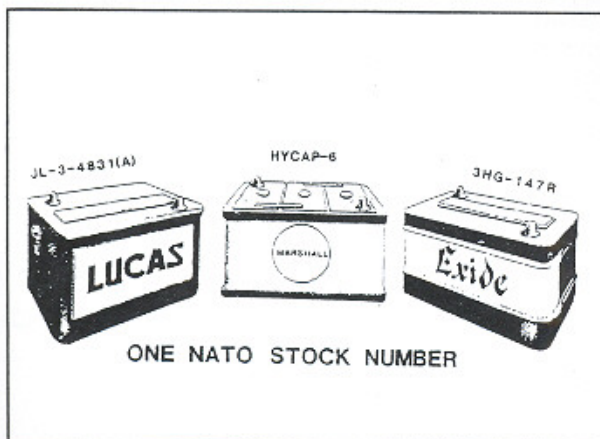
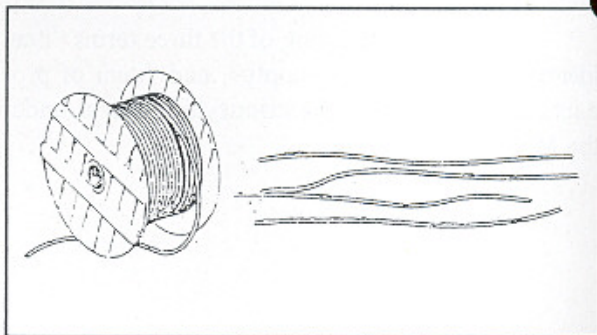
* A modification of normal item production.

* For example, storage batteries made by three different manufacturers may be grouped under one stock number when all three batteries meet the specified operating and technical requirements of department.

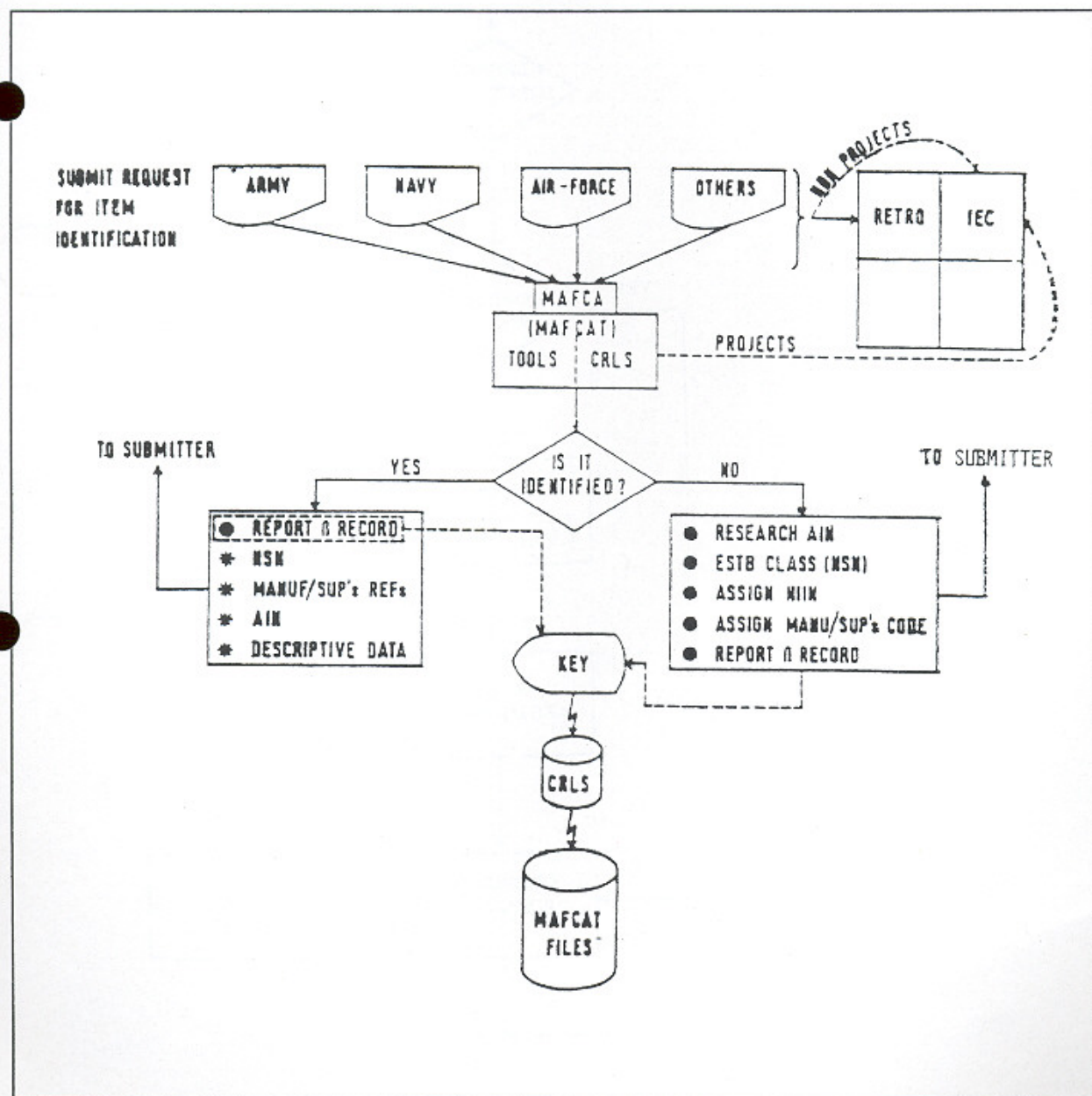


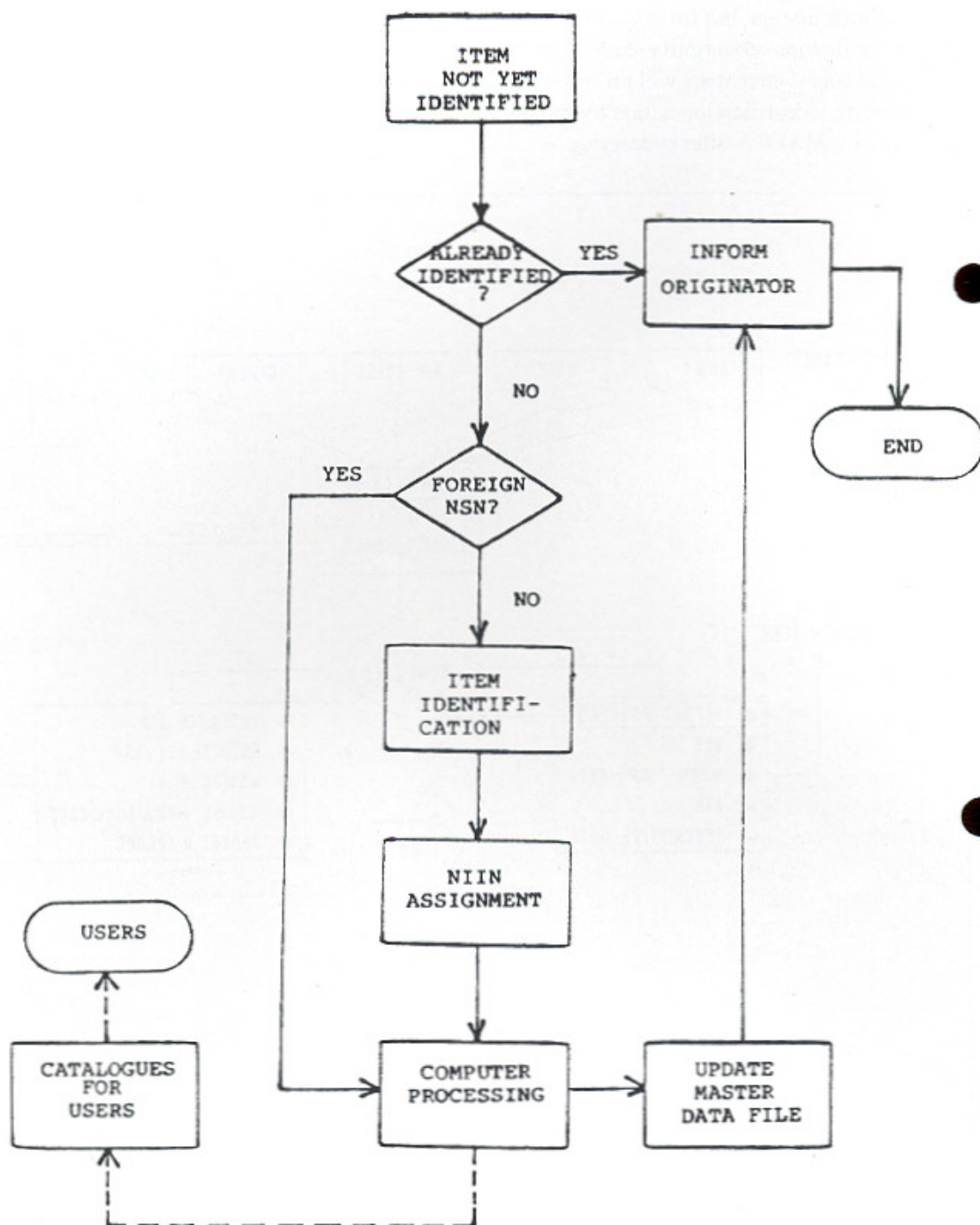
* On the other hand, three different stock numbers may be used to differentiate between the items produced on one production run by a manufacturer of fixed resistors when some meet a tolerance requirement of 5%, others 10% and the remainder 20%.

* In other instances, the measurement of quantity of an item of supply may serve as the differentiating characteristic; a particular cable packaged for issue on drums carrying a specific length may be one item of supply whereas the same cable held for issue in loose measured lengths may be an another item of supply.



Concept. The current concept used in MAFCAS is the "centralised method" where the Services cataloguing cells provide the data required and MAFCA identifying them centrally. The concept is as illustrated below. In the instance of items currently held at depots as stock items, the Depot/Supply Manager will be the main source of information; but for new items entering the MAF inventory the users concept will be the basis of the item identification descriptive data supported by technical or other documentation as appropriate. In the above case supply managers will provide supply management information on MAFCA input forms at the time of requesting identification action by the Service Cataloguing cells. This information will be recorded and circulated by MAFCA after processing.



ITEM IDENTIFICATION PROCESS

Method of Identification.

* There are generally two method of item identification used in NCS; the Descriptive Method and the Reference Method. Presently MAFCAS is only using the Descriptive Method.

* The *DESCRIPTIVE* identification method is one in which the essential characteristics which give the item its unique qualities are described directly in words. It requires the use of uniform item names and answer to appropriate questionnaires to form up the identification records. These records will reflect the essential characteristics and unique qualities which an item of production must have to satisfy the relevant item-of-supply concept. In preparing descriptive records comprehensively, the US Item Identification Guides will be used. An Item Identification guide (IIG) contains a series of questions and illustrations called Reference Drawing Groups (RDGs) regarding the physical and performance characteristics of each item of supply covered by an appropriate item name. The IIG is therefore a device used to ensure that each item identified under the approved item name is described in a standard manner and sequence to secure consistent wording of statements and characteristics. An example of descriptive data recorded for an Item Identification, dictated by international rules, is illustrated below:

STOCK NUMBER 5920-34-076-1286

ITEM NAME	FUSE, CARTRIDGE
BODY STYLE	2A
OVERALL LENGTH	0.969 IN. MIN. 1.031 IN. MAX.
OVERALL DIAMETER	0.246 IN. MIN. 0.254 IN. MAX.
CONTINUOUS CURRENT RATING IN	

AMPERES	1.0
MAXIMUM VOLTAGE	
RATING IN VOLT	250.0 DC
INTERRUPTION TYPE	TIME DELAY
CIRCUIT OVER-CURRENT	
INTERRUPTION DELAY	
TIME IN SECONDS	5.0 200
	PCT OF CURRENT RATING
INTERRUPTION INDICATOR	
METHOD	VISIBLE ELEMENT
MAXIMUM INTERRUPTING	
CAPACITY IN AMPERES	10000.00
TERMINAL TYPE	FERRULE
TERMINAL SURFACE	
TREATMENT	SILVER PLATED
MAXIMUM FUSEIBLE	
ELEMENT	
RESISTANCE IN OHMS	0.70
RENEWABLE FUSIBLE	
ELEMENT	NO
SPEC/STD DATA	US MIL SPEC
NON DEFINITIVE SPEC/STD	
DATA	TYPE 11-1

CONTRACTUAL OBLIGATIONS OF MALAYSIAN MANUFACTURERS TO MAFCAS

The MINDEF and certain foreign government authorities procuring equipment from Malaysian manufacturers or suppliers are required to include in their contracts, a clause under which the contractor is to furnish to MAFCAS such data as may be needed to identify to the MAFCAS the items assessed as necessary to maintain and operate the equipment.

At Annex J is the current standard Malaysian Codification Contract Clause (CCC) which is based on the NATO Standard. The CCC must be included in all tenders and subsequently in all contracts so as to ensure manufacturers and suppliers abide by the requirements.

MALAYSIAN ARMED FORCES CATALOGUE (MAFCAT)

To meet supply management needs and to a lesser degree to assist MAFCAS in the identification processes, five listings will be produced via:

* Cross Reference List "A", which will show the manufacturer's Reference Number (part number, model, type, etc) the manufacturer's Code (assigned by the various NATO participants for their respective countries and by MAFCA for local manufacturers) and the stock number of the items of supply (for all stock numbers in use by Malaysia) plus some significant identification codes. The sequence will be that of the Reference Numbers in left justified sequence.

* Cross Reference List "B" which will form the basis of the Malaysian Armed Forces Catalogue. It will reflect in NIIN sequence, the Stock Number, Reference Number, Manufacturers Codes, Item Names and Short Descriptions and users of the item.

* Stock Number Index which will show in Part A old Service Stock Numbers (SSN) to new Malaysian Stock Number (MSN), in Part B will show the new MSN to the old SSN.

* MAF Item List, which will include:

Supply Management Data
eg:

- * Units of Issues.
- * Quantity unit pack.
- * Last purchase price; and others.

Technical Characteristics
Data:

* Material.

* Measurements.

* Applications; and others.

* Catalogues for each category/range of stores which will be of importance for use especially by using units. These catalogues will include not only descriptive data but will also include diagrams, illustrations and pictures of items concerned so as to assist in acquisition of the correct stores by users.

MAFCAS INTERROGATION

Presently, due to the fact that the items in the MAFCAS data bank are still comparatively small, not much activity is experienced by MAFCA in providing this facility. Most interrogations are done at service level in the cataloguing cells in the respective depots. In the long term however, when the MAFCAS data bank is having enough items for comparison, it is expected that the activity will increase and will eventually become a permanent feature of the MAF logistics system.

In a catalog environment, interrogation is done normally using true manufacturers part numbers as well as the NSNs already allocated by each country. In theory, interrogations by the characteristics of the items is also desirable but except for the USA, this theory is still very much under development stage. Due to the large number of items normally held by each country's defence inventory and due to the even larger number of manufacturers for each item/part, it would be an almost impossible task to do the cataloguing interrogation in an efficient manner manually. Therefore, it is envisaged that in MAFCA, this task will, in due course, be performed by computer.

CODIFICATION

The term "codification" has become almost synonymous in its use for the purpose of cataloguing. The main reason for this phenomena is because "codification" has since become an integral part of cataloguing. By using codification, it has enable cataloguing be handled by computers efficiently. Codification has also enhanced the process of the international exchange of cataloguing data in that regardless of what language the original catalogue was written, for as long as it uses the standard codification system, another member country would be able to make use of it without much difficulty. Where as if there was no codification system then this international exchange would become very difficult to exercise.

INTERNATIONAL DATA EXCHANGE

When an NCB wishes to obtain data in respect of NSN's which have been assigned by another NCB (known as the owning NCB), an agreement has to be entered into for data exchange to take place.

These agreements are known as BILATERAL AGREEMENTS, which broadly means that data exchange is a two way operation. NCB's provide equivalent data and services to each other. However, some agreements are UNILATERAL, one NCB receives data but does not provide it to the other. There are also agreements which are known as LETTERS OF AGREEMENT under which limited data is provided.

NCB's on entering into an exchange agreement are bound to abide by its conditions. They are usually on a Government to Government basis and will cover such things as the data and services to be exchanged and the media used to transmit data, that is listing, punched cards, or magnetic tapes. They will also stipulate what charges, if any, are to be made.

Presently most of the existing agreements are bilateral. This therefore obliges MAFCA to provide to any NCB, with whom Malaysia have an agreement, data from MAFCAS files. This includes (EAM) data as well as descriptive - MAFCA is also required to codify items of Malaysian production when requested.

Most NCBs do not charge for data or services, exchanged with the exceptions of United Kingdom Federal Republic of Germany and the United States of America who are, by law, required to do so. If an NCB cannot perform codification with its own resources, that is, it has to employ contractors or agencies to codify the items, charges are made. This factor of course will be stipulated in the agreement.

It is not binding on any nation to have items identified by the producing country but to further the "one item one stock number" concept, it is desirable. Costs are always a big consideration in deciding whether an item is to be codified - local or overseas.

There are many advantages which result from entering into data exchange agreements. Some of the main ones are as follows:

- * Reduced codification effort.
- * A producing country NCB may under take to codify items for a procuring country NCB.
- * If Manufacturer's data is known and as NSN has been assigned to a concept which the item fits, no codification action is necessary by the procuring NCB.
- * Descriptive and/or EAM data can be provided for any known NSN.
- * Cancellations of NSNs are not undertaken without advising the user NCB of the proposed action and giving it the opportunity to

state a case for retention of the NSN.

- * Provision of other sources of supply through advise of all known manufacturers items of production which meet the item of supply concept of the NSN.

- * Provides to all users the standardization decisions of the owning NCB.

- * Management data can be provided to users. There are some limitations to the usefulness of the data because of the differing supply management functions and policies. Nevertheless, at certain times this facility could be come useful.

- * Cross supply between two countries can be effected very simply in respect of an equipment in use by each, as each would be using the same NSNs.

- * Very importantly, data is kept up dated.

Other benefits which follow from data exchange agreements embrace the supply of publications, such as manuals, cross reference lists, manufacturers and suppliers codes and addresses and the avenue through which data/information not directly related to cataloguing transactions can be sought.

PHASED IMPLEMENTATION PLAN FOR MAFCAS

The introduction of the MAFCAS is to be a phased implementation. Initially it will be to identify those items held as current inventory items and is designated the Retrospective Cataloguing (RETROCAT) task during which all items eligible for identification action will be assigned an NSN.

Concurrently with RETROCAT and importantly, all new items entering the MAF inventory will be assigned NSNs, preferably prior to procurement action. The criterion for establishing the assignment of stock numbers will be whether the items are known to have a stock number assigned by the producing country, in which case that stock number will be adopted.

From the commencement of the implementation plan, identification data including manufacturers and suppliers information and selected supply management data will be collected and recorded by manual processes. The dissemination of this data, to supply managers, will be done with our computer system now available since 1991.

The ultimate objective is to become a full participant in the NCS, entering into agreements for the exchange of cataloguing data with those countries whose equipments are in use by the MAF. As an interim step, the present agreement with selected countries will enable Malaysia to receive cataloguing data provided by the various participants in the NCS.

INFORMATION TECHNOLOGY

Last but not the least, in MAFCA, we also have large collection of information technology from subscriptions of International Handling System US and purchases through NCBs, in the form of Compact Disk-Read Only Memory (CD-ROM), microfilm, microfiche and hardcopy on informations such as:

- * All range of standards in the world.
- * US, UK, FRANCE and GERMANY vendor catalog.
- * Specification on military equipments, ammunition, guns, ships and aircraft and etc.
- * Test Protocol and requirements.

All these information are being used widely by MAFCA during their identification and validation work. But at the same time, these informations can be offered to any Department within the Armed Forces and Ministry of Defence especially in drawing up of contracts, writing specification, GSR, GST and for research and development work.

CONCLUSION

Cataloguing is a small but vital part of good logistics management functions. Without proper cataloguing control over new items entry and dupli-

cation of items is very hard to exercise. Cataloguing and codification is also essential to the success of a proper automated supply management system.

MAFCAS is still in its development stage, continues with emphasis on the use of automatic data processing equipments to store and process the very large quantities of informations required for logistics management purposes and for MAFCAS to become the core to the MAF logistics system.



Lt Kol Annuar bin Ariffin was commissioned into the Ordnans Corps on 10 October 1969. He has held various command appointments at unit level of the Ordnans Corps and as staff officer in formations and Ministry level, including as Computer System Analyst at Bahagian Teknologi Maklumat (BPDE then). He is currently the Director of MAFCA.

"When corruption is openly practised and is in an assense no longer illegitimate, its effect on a nation are most pernicious. First the goverment is weakend, for each time a bribe is accepted, the government loses revenue or is deflected from a proper course of action."

Dato' Sri Dr Mahathir Mohamad

EFFECTIVE LEADERSHIP

Mej Gurcharan Singh

SYNOPSIS

It has been identified that among the resources available to an organisation, human resources are the key for the success of the organisation in the future. Managing human resources well so as to derive optimum output from them willingly is a complex process and it needs leaders who are effective at all levels. Leadership is a process that can be learned and applied to fit the ever changing situation accordingly. To be effective, a leader must use the right style of leadership for a given situation.

INTRODUCTION

In today's fast changing technology and environment where competition has become very intense, the optimum use of resources like manpower, material and finance by any organisation has become very vital to ensure profit making and the very survivability of the organisation. Among the three resources, it has been identified that the optimum use of manpower resource is the key to future successful organisations be it in the Armed Forces or the open market. The productive capability of manpower can be expanded when a combination of factors like motivation, personal goals, ability, right attitude, right things, individual and group needs are developed, formed and enhanced in an organisation. The task of developing, forming and enhancing these factors lies with the leaders of the organisation. Thus there is a need for organisations to have effective leaders at all levels who can combine their personal qualities and use the appropriate leadership style together with the power and authority vested in them and adjust it to the situation at that moment. Leadership can be defined as a dynamic process at work in a group whereby one individual over a particular period of time and in a particular organisational context, influence the other group members to commit themselves freely to the achievement of group task or goals.

Leadership is a dynamic process in that it changes according to the situation like change of technology, change in people in the group or the nature of the task itself. An effective leader is one who can blend a correct mixture of his style, his personal qualities or attributes and gets people committed to perform their task willingly.

INFLUENCING THE PEOPLE

Leaders accomplish the goals of organisations through people by influencing their behaviour by either using power or by means of persuasion. The power sources available to leaders are physical power, resource power that is the possession of valued resources, personal power or popularity, position power or legitimate power that comes as a result of the role or the position in the organization and expert power that is vested in someone because of their acknowledged expertise.

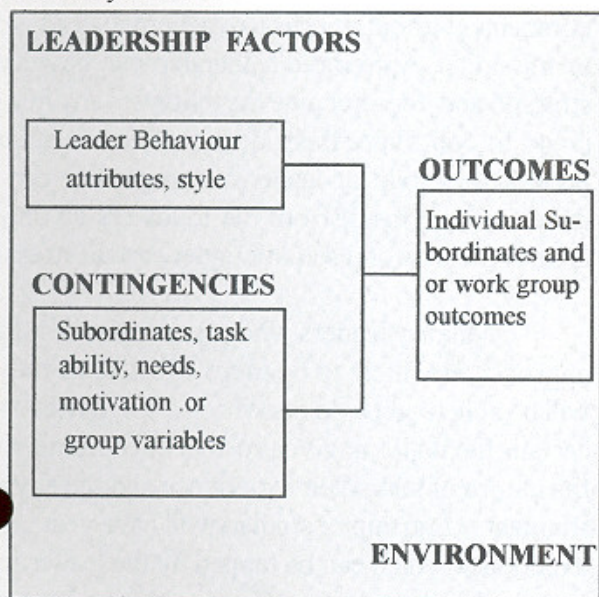
Among all the individual influence a leader has over his subordinates, it is acknowledged that influence by persuasion is the most effective and this explains why some leaders seem to be able to influence the behaviour of their subordinates better than others.

Persuasion which also means being democratic or supportive enables a leader not only to get work done through the people but also gets their commitment, and their trust by sharing decision making with the people. This

way, the people will believe in themselves and will rise to the challenge of achieving something that they have decided.

LEADERSHIP STYLE

Leadership does not take place in a vacuum rather it takes place in an environment or situation which is ever changing. The most effective style of leadership for this changing environment or situation is the contingency style. In any given situation there are various mix or determinant which decides effective leadership in an organization. These mix are shown diagrammatically below :-



In any situation that confronts a leader there are four sets of influencing factors that he or she must take into consideration :-

- The leader - his or her preferred style of operating and his personal characteristics.
- The subordinates- their preferred style of leadership in the light of the circumstances.

The task - the job, its objectives and its technology.

These three factors and their fit will in their turn all depend to some extent on the environment, the organisational setting of the leader, the group and the importance of the task. The best fit contingency approach maintains that there is no such thing as the right style of leadership, but that leadership will be most effective when the requirements of the leader, the subordinates and the task fit together.

THE LEADERSHIP MIX

In a given situation, a leader must adopt an appropriate style in the light of the relative favourableness of the situation to achieve the desired group performance. His personal attributes like intelligence, initiative, self-assurance, enthusiasm, sociability, integrity, courage, imagination, decisiveness, energy, faith and determination should be combined with the appropriate style for the group under his leadership.

He must then take into consideration the ability of his subordinates and fitting them into the right jobs. The groups motivation must be given utmost importance. Motivation is defined as all the forces in a person that energise, directs and sustains a person or group of people to act so as to achieve their goals.

A person could be able and knowledgeable but he will not perform to his very best unless he is motivated to do so. Thus an effective leader must thoroughly understand motivation and apply it to obtain optimum output from his subordinates. The leader must consider the goals of each individual in the group, their needs like physiological, safety, social, self-esteem or self actualization. The nature of task to be performed by the group should also be considered. It must

be identified whether the job is routine administrative function or is it complex, creative or problem-solving (e.g consultancy). Allocation of task according to ability of individuals or the development of the group should then be considered. The leader must attain a high degree of commitment from his group to achieve the groups goals and this should be maintained for a long period of time.

The leader must also have a vision and mission and direction for the organisation which he is heading. The other factor that must now be considered is the environment. The leader, the subordinates and the task do not occur in a vacuum.

There are six key aspects of the environment:

- * The power of the leader in the total organization.
- * The relationship of the leader to the group.
- * The organizational norms.
- * The structure and technology of the organization.
- * The variety of task.
- * The variety of subordinates.

Apart from the best fit approach described above, a leader should also take into consideration the maturity and readiness of his follower and apply the style of leadership best suited to their maturity level and readiness. When the subordinates are new to the job, the leader should be more directive and have low relationship with them. As the subordinates are gaining experience, he should be less directive but have a high relationship with them.

Once the subordinates are able and willing to do the job, the leader should be less direc-

tive and maintain a low relationship with them. At this stage, he should delegate some of his task and concentrate on other tasks. As organisations consist of people with different level of ability and willingness, a leader will be required to lead groups with different state of readiness. Here the leader should be able to vary his style of leadership to suit the various groups.

LEADERSHIP IN THE ARMED FORCES

In the Armed Forces, it is known that the most appropriate style of leadership is for the leader to be autocratic. This is due to the nature of military task which can be very demanding and dangerous thus requiring direction or command without question to accomplish a task or mission. Autocratic leadership can be very stressful and does not give the followers any flexibility to contribute their ideas. Over a sustain period, this style of leadership might not produce the best result from the followers as they are not their natural self but under certain stress.

Military leaders who practice the best fit approach are likely to be more effective as they will be able to get soldiers who are committed as certain flexibility is given to them according to the nature of task, their experience and the environment. A group of soldiers will have years of experience which can be tapped by the leader to accomplish his mission. History always have a lesson for those who are willing to learn from it. An example of the best fit approach applied successfully by a commander in a logistic unit further support this statement. Mej Ali who took command of a Transport Company was given a difficult task of putting the unit fit for operation. The unit has a group of hostile subordinates with low morale but high experience.

Mej Ali found out that the previous com-

mander has been very directive and requires task to be accomplished without question. Any failure was severely dealt with. He seldom mixes or finds out the problems faced by the subordinates while performing their tasks. The vehicle serviceability level was only 50 percent as most vehicles were off road due to lack of spares or accidents. To make things worse, there were five soldiers in the unit who were drug addicts.

Mej Ali went about tackling the problems by stages. Once the problems were identified, he decided to first improve his relationship with his subordinates. He held talks with them and made them participate in the decision making. He next considered for their need for growth and satisfaction. There were many soldiers who could not be promoted as they were not sent for career courses. Mej Ali brought this issue to his Headquarters and got their approval to send maximum number of soldiers for courses. Those qualified were recommended for promotion while the bad hats were weeded out to remove their influence on the others. A reward system was established for the best drivers and the best platoon. Vehicles which could not be repaired due to lack of spares needed Mej Ali to use his friendly approach to get the spares from the Ordnance Depot. Repair work was then scheduled and time frame was given for vehicles to be put 'on road'.

While getting his new unit back to shape, Mej Ali did not forget the welfare of his soldiers and their families. Recreational activities were organised where the whole families participated. Through the wives club organisation, Mej Ali's wife managed to know the soldiers wives and listen to their problems.

After a period of two months, Mej Ali managed to have a personal touch with all his subordinates and they were not afraid to see him

for any advice or problems. Mej Ali had the imagination and vision to see that the organisation he is heading is moving towards the right direction and achieving its goal. He successfully managed to obtain a 90 percent serviceability rate for his vehicles after a six months period and he then had a group of subordinates who were happy and satisfied and were doing their job willingly. They were confident that the unit was moving in the right direction under the leadership of Mej Ali.

CONCLUSION

In conclusion, Leadership is a dynamic and difficult process to master. It involves the abilities and traits of a leader, the abilities and motivation of his subordinates, and the relationship between the leader and his subordinates. Furthermore, leadership involves the nature of the task, especially as it relates to the abilities and experience of the leader and his subordinates. As leadership is a dynamic process, effective leaders cannot use the same style of leadership with all people, in all situations, and without change over time.

A leader must not only get work done through the people, he must also get their commitment. He must train his people to be responsible and be able to make certain decisions themselves. This way the people will believe in themselves and will rise to the challenge of achieving something that they have decided.

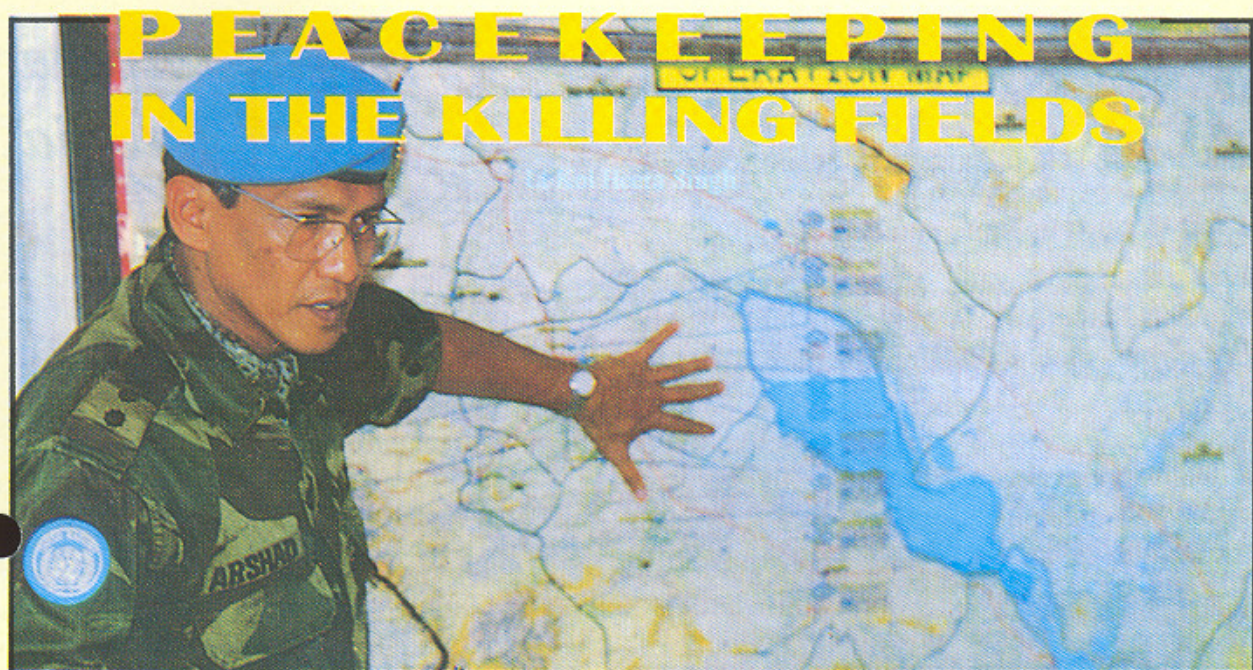
In the Armed Forces, leaders are required to be autocratic due to the nature of the task, but they should study the situation carefully and adjust accordingly in order to be more effective.

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Meji Gurcharan Singh was commissioned into the Service Corp in 1977. He held various appointment in the Corps Transport and Supply Units and as staff Officer at Brigade and Field Command Headquarters. He is a Corporate Member of the Chartered Institute of Transport. Currently he is the staff officer at Kumpulan Kor Perkhidmatan Markas Pemerintahan Logistik



I (THE CAMBODIAN PEACE MISSION) NTRODUCTION

June 14, 1993 was a most auspicious day indeed for Cambodia, as it marked the day that the newly elected Cambodian constituent assembly was meeting for the first time. Cambodia had finally come out from the wilderness of international politics, and now had a democratically elected government which is recognised as legitimate by the international community. This was also the day when the United Nations could reflect that its most ambitious peacekeeping operation, the United Nations Transitional Authority in Cambodia (UNTAC) mission, had achieved its mandate and been proven a huge success. The road leading to this day had however been fraught with numerous political, military, social, administrative as well as logistics problems. Many, in the international community were convinced they would not see a solution to the Cambodian problem in their lifetime. The international mass media had a field day reporting on all the negative aspects of the peacekeeping mission and the supposedly deteriorating Cambodian situation.

In the end they were all proved wrong. Their premonitions of the government bullying its way to an electoral victory and of not handing over power had not materialized. The long promised Khmer Rouge offensive did not take place, and finally their predictions that there would be political and military turmoil proved to be wrong.

Malaysia was one of the main contributors to this peace process, both through its political initiatives prior to the UNTAC mission, and its contributions to the mission itself, mainly in the form of peacekeeping troops. Due to this

there were some Malaysians who were privileged to hold certain appointments in the UNTAC Military Headquarters where they had an intimate view of the peace process.

BACKGROUND OF THE CONFLICT

The Cambodian conflict could be said to have had its origins sometime in the early 60's when Prince Sihanouk became the Head of State of modern Cambodia. This was the time when the roots of war were also taking shape in neighbouring Vietnam. Prince Sihanouk's close alignment to the Soviet Union and China,

did not endear him well with the Americans.

In March 1970, Prince Sihanouk was overthrown by a US backed military regime led by General Lon Nol. The Lon Nol regime was however weak and could not deal with the Khmer Rouge insurgency problem that was rapidly engulfing the whole country.

In April 1975, the Khmer Rouge under Pol Pot overthrew the Lon Nol regime and established the new regime of Democratic Kampuchea. The horror of war in the preceding years was replaced with a new kind of terror under the Khmer Rouge. Invoking a kind of radical communism, the Khmer Rouge began the construction of a new agrarian society. The country's basic economic and social infrastructure was destroyed completely. The population was forced to relocate to rural areas to work on agriculturally based industries.

Relations with Vietnam, the traditional and historical enemy of Cambodia, were always tense and in 1976 and 1977 there were numerous border clashes between the two sides. On 25 December, 1978, a dissident faction of the Khmer Rouge supported by Vietnamese Regular Forces managed to oust the Pol Pot Regime.

This period saw the emergence of numerous insurgent Cambodian military groups with nationalistic aspirations aimed at overthrowing the Vietnamese regime. These numerous groups finally merged into three distinct factions. They were the National Army of Democratic Kampuchea (NSDK) or commonly known as the Khmer Rouge, the Army National Kampuchea Independence (ANKI) and the Kampuchea Peoples's National Liberation Armed Forces (KPNLAF). The NADK and ANKI were backed by China and the KPNLAF was backed by the US. These factions, although separate organizations with separate leadership, cooperated militarily, and to a certain extent politically, in their common aim of overthrowing the Vietnamese sponsored regime.

In 1989, under tremendous pressure from

the international community, Vietnam agreed to withdraw from Cambodia. On its withdrawal however, it set up a pro-Vietnamese government in Cambodia led by Mr. Hun Sen. This regime was not given recognition by the United Nations. War therefore continued to take place and the three major factions managed to gain control of over 30% of the country. A local solution to the conflict seemed inconceivable.

THE PARIS AGREEMENT

The international community meanwhile took numerous political initiatives to address the conflict. These political measures were largely the efforts of ASEAN, France, the former colonial masters of Cambodia and Australia. Political negotiations were always difficult as the enmity among the three factions and the ruling faction, the Hun Sen regime was intense. The turning point came at the Jakarta Informal Meeting (JIM), held in July 1988, as for the first time, the four Cambodian factions sat at the same table. After numerous political and military disagreements which took the best part of two years, the four factions under pressure from the international community finally signed the Paris Agreement which contained the following three important articles:-

- * A ceasefire to take place immediately in Cambodia and the eventual cantonment, disarming and demobilization of 70% of the Armed Forces of the various factions.
- * The setting up of the Supreme National Council (SNC) under the chairmanship of Prince Norodom Sihanouk, consisting of representatives of the various factions, as the "source of authority" during the transitional period.
- * The establishment of the United Nations Transitional Authority in Cambodia (UNTAC) with the main aim of holding free and fair elections, to establish a legitimate government.

THE UNTAC MISSION

Prior to the establishment of the UNTAC mission in Cambodia, the *UNAMIC* advance mission was established. The prime objective of this mission was to carry out preparatory work and to determine the prevalent difficulties in Cambodia, along with remedial measures. UNTAC could be said to have been finally established with the arrival of the Special Representative to the Secretary General, Mr. Yasushi Akashi, to Cambodia on 15 March 1992.

The mandate given to UNTAC consisted of the following important aspects:

- * The organization and conduct of free and fair general elections
- * The establishment and implementation of human rights programs.
- * The repatriation and resettlement of Cambodian refugees and displaced persons.
- * Assistance in the conduct of civil administration during the Transition period.
- * The cantonment and demobilization of 70% of the Armed Forces of the Four Factions.
- * Assistance in the maintenance of law and order during the transitional period.

It was clear from the onset that in order to achieve this mandate, a very large civil and military forces would have to be deployed in Cambodia. Thus UNTAC became the largest ever peacekeeping mission launched by the UN.

UNTAC consisted of seven very distinct components. These were Human Rights, Electoral, Civil Administration, Civil Police, Repatriation, Rehabilitation and finally the Military component. The total strength varied

according to the phase of operations, but it was safe to say that at its peak, UNTAC consisted of over 24,000 military as well as civilian personnel representing 45 countries. This number included locally recruited civilian staff.

THE PEACEKEEPING PROCESS

The main task of the military component during the mission was to stabilize the security situation in Cambodia and build confidence among the conflicting factions. In addition to this, the other important tasks of the military component under the mandate outlined in the Paris Agreements were as follows:-

- * Verification of the withdrawal and non-return of all categories of foreign forces and their arms/equipment.
- * Supervision of the cease-fire.
- * Regroupment, cantonment, disarming and demobilization of 70% of the Armed Forces of the factions.
- * Weapons control, including monitoring the cessation of outside military assistance and the confiscation of weapon caches and military supplies throughout Cambodia.
- * Assistance with the mine clearance program, including training and mine awareness programs.

In order to carry out this mandate, the military component of the Mission deployed 12 battalions in various sectors all over Cambodia. The battalions came from Malaysia, Uruguay, Pakistan, India, Bangladesh, France, Bulgaria, Tunisia, Ghana, Indonesia (2 battalions) and the Netherlands. This was augmented by four engineer battalions provided by Thailand, Japan, China and France. Support elements came from the following countries:

- * Medical support - Germany and India.

- * Logistics support - Pakistan, Canada and Uruguay.
- * Naval element - United Kingdom and Uruguay.
- * Air element - Russia and France
- * Signals element - Australia.

In addition to these there were 485 military observers and approximately 204 military staff provided by a varied number of countries like Cameroon, Algeria, Ireland etc. All in all approximately 34 countries were represented in the military component of the Mission.

It was clear, from the start that the Khmer Rouge was not going to comply with the Paris Agreements. The reasons are still not very clear but the following assessments can be made. Firstly, the Khmer Rouge reluctantly signed the Peace Accord, under tremendous pressure from China, her then main ally and supporter. Secondly, the Khmer Rouge was basically a military organization and was therefore weak politically. It realised that it did not have popular support among the local populace and hence would not have fared well in democratically held elections. Thirdly, she had vast commercial interests like timber logging and gem mining in the areas under her control which was yielding badly needed revenue for her to continue the insurgency. She was therefore very reluctant to give up these interests easily. As a result of this, from the onset, the Khmer Rouge in violation of the peace agreement, refused to allow UNTAC access to areas under its control.

Military battalions were deployed all over Cambodia less areas under the control of the Khmer Rouge. These battalions were in turn augmented by military observers, who were the eyes and ears of the Mission. The presence of these battalions and the observers, had the effect of making the various factions with the exception of the Khmer Rouge, strictly observe Phase 1 of the peace process i.e. the ceasefire. At the same time it must be said that the presence of a large number of peacekeepers deterred the Khmer Rouge from violating the

peace as regularly as they had done prior to the establishment of UNTAC. The policy of UNTAC was very clear in regards this aspect. Everytime the Khmer Rouge, or any other faction violated the ceasefire, immediate political and military pressure was brought to bear upon them. This had a significant effect, and on the whole most of the ceasefire violations committed during the transitional period were considered low intensity violations.

The verification and supervision of the withdrawal of foreign forces and more executive powers for the SNC were the main issues cited by the Khmer Rouge, for non compliance to the peace agreement. They claimed that Vietnamese forces were still present in Cambodia, and were assisting the "puppet government" in the war against the other factions. UNTAC established three strategic investigation teams for the purpose of ensuring that all reports of foreign forces were investigated thoroughly. To the best of UNTAC's knowledge, no foreign or in particular Vietnamese Forces were operating in Cambodian territory during the transitional period.

Phase 2 of the ceasefire commenced on 13 June 1992. Phase 2 of the agreement called for the cantonment, disarmament and demobilization of 70% of the Armed Forces of the various factions. Except for the Khmer Rouge, all the other three factions complied with this phase. It must be stated here that the initial response from the other factions was encouraging, but later became lukewarm, due to non-compliance by the Khmer Rouge. This was expected as it would have been militarily disastrous for the other factions to hand over all their weapons and disarm, and thus allow the Khmer Rouge to strengthen their hand militarily. The weapons that were handed over by the factions were also usually non-operable and in a bad state of maintenance. It was clear that the factions did not trust each other to comply with this phase and were keeping their best weapons for contingency purposes in case the peace agreement collapsed.

The mine clearance and awareness pro-

gram could be considered to be a success. The main aim of the program was to teach the local Cambodians to recognize and disarm mines. The magnitude of the problem of mines in Cambodia is such that it is assessed that it will take at least a decade to clear and disarm a major portion of these minefields which are littered all over Cambodia. Thus the emphasis from the start for the UNTAC engineer battalions, was to teach disarmament methods to the locals, as opposed to disarming the mines itself. At the end of the Mission, it was reported that a large number of locals had acquired basic mine recognition and disarming skills. The engineer battalions on the other hand concentrated on tasks like the building and rehabilitation of basic infrastructure like bridges, roads, schools, irrigation canals, etc. In this sense, the engineer battalions were a great success.

In the carrying out of all these tasks, the military component of UNTAC faced numerous problems, the main one being the non compliance of the Khmer Rouge to the peace agreement. In turn, it was also very clear that the Khmer Rouge, not only did not want to cooperate, they were actively involved in activities that would disrupt the peace process. In the initial phase, they conducted attacks on government forces with the main aim of gaining territory. Later there were several incidents of temporary detention of UNTAC military personnel, in which fortunately no one was hurt. There were also a few major attacks on UNTAC military installations where ten UNTAC personnel died. To further disrupt the peace process, the Khmer Rouge conducted politically motivated attacks on Vietnamese personnel residing in Cambodia. The question of Vietnamese immigrants is a politically sensitive issue in Cambodia, and the Khmer Rouge aimed to take advantage of this issue by way of inter-relating these killings to the question of Cambodian nationalism and the need for Cambodia to rid itself of this Vietnamese immigrant problem. Although these issues posed many problems to the military component, they fortunately did not cause the Mission to collapse or to be aborted. The strong

military leadership in UNTAC, and the unanimous political backing from the UN security council and the international community played a significant part in this.

During the elections, the military component along with the factions less the Khmer Rouge, undertook the role of providing blanket security at polling stations and other key locations. Security was also provided to the electoral workers and the ballot boxes during transfer from the polling station to the counting centers, which were usually located in the Provincial capitals. The resounding success of the elections due to the high voter turnout, was most definitely as a result of the fact that Cambodians had faith in UNTAC and the security measures undertaken during the elections.

The military component on the whole played a major role in the success of the UNTAC mission. A critical element was proactive management which meant that the reverses and difficulties during the mission did not lead to failure. In some cases they were used to open other management options which helped the achievement of the aim. The Mixed Military Working Group Secretariat (MMWG), which was the link between the military component and the Factions, and Plans Branch, were the main instruments for proactive management in the military component.

The leadership of the military component was also a source of the success of the mission. There was always clear guidance and most important of all, there was at all times a clear focus on the aim of the mission. It should be noted that this was in the face of constant pressure from parties with vested interests, to become involved in internal security operations against the Khmer Rouge, and other short-term goals which would probably not have been achievable in any case. It is useful to observe that peacekeeping and peace enforcing do not mix. Peacekeepers lose their political strength when they become involved in enforcement, but without any guarantee of the protective structures available to the enforcer. The military leadership in UNTAC were very clear in regards to the mandate and therefore adhered to it

religiously. They were aware that any attempt by the military component at peace enforcement, for which it was neither mandated,

structured nor equipped for, would have almost certainly led to a loss of international support and eventual failure.

PROBLEMS DURING THE MISSION

Political. The major problem faced by the Mission was the political non-compliance of the Khmer Rouge to the Paris Agreements. The two main issues put forward by them for this non-compliance was as follows:-

- * The need for more executive powers to be given to the SNC, as the sole legitimate political authority in Cambodia during the transitional period.
- * The presence of foreign forces and in particular, Vietnamese forces in Cambodia, which were against the Paris Agreement.

UNTAC and the international community went to great lengths to resolve this problem but without any success. It seemed that UNTAC could do nothing to appease the Khmer Rouge. Their stand on these two pre-conditions threatened to disrupt the peace process on numerous occasions. It was only the firm stand taken by UNTAC and the unanimous backing of the UN Security Council, that prevented this problem from jeopardizing and disrupting the peace process. It is believed that both these reasons were mere excuses for non-cooperation. The Khmer Rouge is basically a military organization which did not have widespread support, and thus weak politically. It was aware that it would definitely be unable to gain power through the political process as the Cambodian people still harbor a deep hatred for them.

Military. Militarily, the main problem for UNTAC was the supervision of the ceasefire. Offensive military activities were constantly being undertaken as a matter of routine by the Khmer

Rouge and to a lesser extent the other factions, to violate the ceasefire agreement. In the initial stages the Khmer Rouge took advantage of the

euphoria of the peace process to gain military advantage, by occupying adjacent areas to the areas they controlled. This objective of the Khmer Rouge to capture ground and the retaliations of the other factions ensured that this problem of ceasefire violations continued throughout the transitional period. Fortunately these were low intensity skirmishes which did not have any major effect on the peace process. There was also a great fear that the Khmer Rouge would try to militarily disrupt the elections. Fortunately this did not take place.

The MMWG which was set up under the terms of the Paris Agreements must take a major share of the credit for resolving many of the military problems that arose during the transitional period. The MMWG was the Force Commander's main instrument for dealing with the Cambodian Factions. The MMWG carried operational responsibility for ongoing negotiations with faction liaison officers on a range of issues, including real time problem solving, as well as coordination and guidance of decentralized local ceasefire committees throughout the country. Liaison so established was often used for negotiations and conflict resolutions. That the military situation in Cambodia was stable most of the time is a testament of the success of the MMWG.

Logistics. UNTAC is perhaps the biggest ever peacekeeping mission attempted by the United Nations. It therefore initially faced numerous logistical and administrative problems, as Cambodia simply did not have the infrastructure to support an operation of this size. The initial phase of the mission was thus a logistician's nightmare. Even drinking water had to be airlifted to troops operating in isolated areas. It is felt that most of these problems occurred due to the lack of detailed planning prior to the mission. Matters were made worse as a result of the red tape practised by the UN bureaucratic system.

LESSONS LEARNT

Political commitment to the Peace Agreement. During the peace process, the members of the Security Council and the international community at all times displayed total commitment to the Paris Peace Agreement. The conviction of UNTAC was made easier by the unanimous support of the Security Council, which passed resolutions whenever the Paris Agreement was breached. Any attempt by any faction to subvert the peace process was met with harsh criticism by the international community, including the former allies of the faction concerned. Attacks on military personnel were portrayed as attacks on the international community. This unanimous show of political support more than anything else was the key to the success of the UNTAC mission.

Extensive Representation. The peacekeeping operation in Cambodia outdid previous international peacekeeping experiences in both the number of contributors and their diversity. Representatives from every continent, major religious groups and major world powers were present. Nations were unified in pursuit of a common goal in Cambodia. Former supporters of parties to the conflict, members of neighbouring nations and the former colonial power were present in a ground breaking precedent. The absolute neutrality of each of these participants was critical to internal mutual respect and ultimately, unity of purpose. The very fact that so many countries were represented, gave the Mission a sense of purpose and proved to the Cambodians that the international community was serious in finding a solution to the Cambodian conflict. This gave the Cambodians themselves the will to ensure that the peace accords proceeded according to plan.

They could not have demonstrated this will better than when they surprised UNTAC and the factions by coming out in droves to vote during the elections.

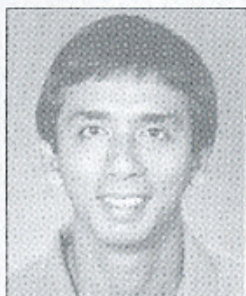
Neutrality. The Mission learnt early on in its establishment that unity and especially neutrality were to be of paramount importance. There were many times when the neutrality of UNTAC was challenged. This was especially by the parties to the conflict, whenever it suited them to do so and to a certain extent certain parties who had vested interests in the conflict. The success of the Mission to a large extent owe itself to the fact that UNTAC resisted these attempts and in fact acted and ensured that they were seen to act in a neutral manner at all times. This neutral stance earned UNTAC enormous political strength. The composition of the UNTAC military component also ensured a balance which allowed a strongly neutral stance. National contingents in the military component, to a large extent worked towards the interests of

CONCLUSION

UNTAC, as it turned out, was a classic peacekeeping mission, possibly the most successful in peacekeeping history. It broke new ground and has defined the concept of peacekeeping more precisely. Currently, with the proliferation of peacekeeping missions around the world, it would perhaps be wise to study this mission in detail and the reasons for its success. Many of the difficulties encountered by the Cambodian mission certainly merits in depth study. It would however be foolhardy to suggest that other missions should totally adopt the peacekeeping measures undertaken in Cambodia. All peacekeeping missions are unique and have their own myriad of problems that reflect the local

political, social, economic and military environment. They cannot be solved by simply importing solutions. The success of the UNTAC mission however certainly merits analysis and certain measures undertaken deserve adoption in other missions where possible.

It is still premature to say that all will go smoothly in Cambodia. The political bargaining that lies ahead will be fraught with risks and the Khmer Rouge remains a threatening presence in the countryside. Cambodia has however been given its best chance for peace in 25 years.



Lt Kol Heera Singh served as a staff officer in the Mixed Military Working Group, in UNTAC HQ in Phnom Penh, Cambodia from the onset of the mission in May 1992, to the end of the mission in October 1993. He also served in the UN headquarters, New York, as the UNTAC Liaison Officer from May 1993 to August 1993. He is presently the Commanding Officer of 21 Arty Medium Regiment.

"Pemimpin tempur adalah seorang yang berpewatakan teguh, yang memiliki ketahanan fizikal dan mental yang tinggi serta berupaya mengatasi tekanan perang di samping dapat berfikir dengan waras serta bertindak dengan wajar bagi melaksanakan misi dengan jayanya"

Buana Sekpur (April 1981)

MALAYSIA'S DEFENCE POLICY POSTURE: A SHIFT FROM INTERNAL TO EXTERNAL DEFENCE IN THE 1990s?

(PART I)

LT KOL MOHD KAMAL BIN OMAR

*" The Military's role in national security is to defend the nation's
strategic interests from external aggression "*

Gen Dato' Che Md Noor bin Mat Arshad

ABSTRACT

Despite of the end of the Cold War, the pullout of the American (US) bases from the region, the demise of Soviet Union and the lay down of arms by the Communist Party of Malaya (CPM), the current regional situation remains unstable and it could threaten Malaysia's national interests. This period of transition see the emerging of regional major powers taking the initiative to fulfil the supposed "vacuum" left with the exit of the US and the Russians. With these uncertainties at large, does it in anyway affect us that could lead to a shift in our National Defence Policy posture from internal to external defence?

It is the intention of this paper to look into this probabilities and come up with necessary recommendations, if there need to be any.

INTRODUCTION

The Asia-Pacific region is becoming increasingly important to the world economy with its high growth rates of new industrial powers such as South Korea, Hong Kong, Taiwan and Singapore. But despite such prosperity, the region is prone to political and military instability. This leads to the current growing defence budgets, heightened economic and social tensions within the region.

With the pullout of the United States (US) bases in the Philippines and the Russian on the other hand have demilitarized its activities in Asia, indicated the physical presence of the superpowers in the region begins to wane. At the same time, major powers such as China (PRC), Japan and India are given the opportunity and will have an increasingly important and active role to play in stabilizing a region which retains the potential for violent conflict.¹

As for Malaysia, potentially under threat

from its neighbours, must therefore treat security as the overriding concern of its foreign policy. But on the other hand, as per of today, there is no known immediate or direct external military threat towards Malaysia's security. This pertinent aspect, more or less, has created an overcast on the type of defence we should pursue, in ensuring our correct choice of National Defence Policy.

As to recollect, let us go back into history. The decision of the British in the late 1960s to withdraw from "East of Suez" and of the Americans to "deescalate" the prosecution of the war in Vietnam led to a reappraisal of the policy of reliance on "great and powerful friends". It came to be widely acknowledged that Malaysia in future need to practice a greater degree of self-reliance both in defence policy and in diplomacy.² The question of are we heading towards self-reliance and can we achieve it, is another matter entirely. As it is, especially for this paper, we are merely looking more towards the interest of threat and the defence policy.

On the other hand, do we have a viable defence policy? Does the ever changing environment affect our security? If it does, is there a shift of posture from internal to external defence, relating to our defence policy, in particular with the recent surrender of the armed struggle by the **Communist Party of Malaya (CPM)**? Do we need to have another look at our force structure? Does the Army still dominates our defence? Or, has the time comes for us to give priority and to boost-up our Navy and the Air Force as to play a greater and major role in our defence? By the way, are we not a **maritime nation**?

Therefore, basing on these arguments, it is the aim of

this paper to enlighten the readers, whether there is a shift in the defence policy posture from internal defence to external defence. However, I do not wish to go deeply into what the **National Defence Policy** is all about. Only those parts considered relevant to this topic, will be highlighted.

It is assumed, otherwise recommended, that readers of this paper have some reasonable background knowledge on Malaysia's Defence Policy. It is not the wish of the writer to go in depth on the policy, other than those considered pertinent and need to be addressed, enlightened, as to clarify or project, in writing this subject.

NATIONAL DEFENCE POLICY

'The expansion of our Armed Forces must continue....so that we will be able to stand on our own feet for the defence of our independence and our integrity.'

Tun Dr Ismail

BACKGROUND

The National Defence Policy encompasses the strategy of **Deterrence, Forward Defence and Total Defence**, was approved by the **National Security Council** in 1986. Basing upon the analysis of our strategic interest, regional strategic scenario and our internal security situation, the policy emphasised towards the principles of **self-reliance, regional co-operation and external assistance** without compromising our foreign policy objective of **non alignment and neutrality**.

A review on the National Defence Policy was carried out in 1991 by the **Policy Division, Ministry of Defence**. It was found to be that apart from the short comings on the concept of **Total Defence** and the **Manpower Limit**, the policy was said to be sound and valid.

Talking about National Defence Policy, how

does it come into being and on what aspect was it guided into play? Basically, it was the **British withdrawal** and the renewed claim of Sabah by The Philippines that had more or less changed the entire defence picture. According to the Finance Minister then **Tan Siew Sin**:

"....more will have to be spent on defence and internal security in the coming years....without security there can be no development, either economic or social....security is all important, but it costs money, in fact, plenty of it."³

Prior to the independence of Malaya, **Plan Dynamo** was then the **Malayan Defence Plan** which was examined by a **British defence team** in 1962 and was reviewed and modified in 1964 by defence experts from **Britain, Australia and New Zealand**. The plan was decided essential and feasible then.⁴

In 1963, the Malaysian Armed Forces (MAF) capabilities was intensified and the Defence Minister then, the late Tun Abdul Razak stated:

“ as Indonesia’s attitude constituted a threat to the security of the country, the Government had decided to take immediate steps to effect a substantial expansion of our Armed Forces for our national defence. “

The tense situation then, saw the uprising of interest by the government with the support of the people, towards the defence of Malaysia. The focus was on the Defence Policy.

By the way, what do we understand by defence policy? To ensure and to benefit readers of this paper, let us have a quick look at the definition of defence policy.

DEFINITIONS OF DEFENCE POLICY

John Garnett, in writing “Defence Policy-Making”, stated that defence policy is susceptible to rational analysis and although may never quite get to the bottom of any particular decision, can penetrate some of the mystery by identifying the constraints that pushed decision makers toward some choices and away from others.

At the same time, Garnett defines Policy as series of decisions and in prospect it is revealed by general statement of purpose. It incorporates what governments have done and what they are trying to do decisions about what to do and how to do it.⁵

Edward Waner 111 defines defence policy as the variety of activities which a state undertakes to protect and promote national security. These actions are for the most part directly associated with the development maintenance and employment of national military capabilities.⁶

Whilst **Huttington** in describing defence

policy pointed out that it cuts clearly across the usual distinction between foreign policy and domestic policy, describing domestic policy as consisting of those activities of a government which affect significantly the allocation of values among groups in society while foreign policy consists of those activities of a government which affect significantly the allocation of values between it and other governments. Defence policy in the main context consist of those elements of both foreign and domestic policy which directly affect the armed forces.

Anyway, as clearly being pointed out by **Azizah**, Garnetts understanding of defence policy of what to do decisions and how to do decisions seems to be more accommodating for our purpose.⁷

On understanding the definition of defence policy, how does one determines defence policy? On what factor does it base on? The factor that shapes defence policy is the strategic environment and the threat faced by the nation.⁸

As for Malaysia, it is much much easier said than done. Being strategically located; astriding the vital sea line of communications, plying between the Indian Ocean and the Far East; being part of the disputed overlapping claims in the South China Sea; and above all the regional security is constantly being plagued with the unstability situation, be it political, social, economy or military. To add further, what more with the no longer physical presence of the superpowers in the region enabling the emergence of the local major powers creating much more anxiety among the smaller states. In facing with all these predicament, it is not in the least going to be a smooth sailing for our political masters to come up with a clear cut answer on the correct and suitable type of defence policy for us to abide to. The only thing certain for the moment, relating to internal threat is the laying down of arms by **Chin Peng** and his followers. On this aspect, yes, we the armed forces on this score, can concentrate more towards the external threat (conventional warfare) as compared to internal threat, if there is any.

It is therefore come as a no surprise, that frequent questions have been raised as to whether Malaysia has got any Defence Policy. Do we have a defence white paper? If not, why not? The questions just referred to in respect of defence policy (regional policy) reflect a measure of uncertainty as to how the present should be managed and the future met. As mentioned earlier, the factor that shapes defence policy is the strategic environment and the threat faced. Malaysia, however, has no clear defined external enemy as compared to the internal threat. What more with the continued but rather fluid instability situation in the region.⁹

What ever, what does defence policy constitute of?

FUNDAMENTAL ELEMENTS OF DEFENCE POLICY

The fundamental elements of Malaysia's Defence Policy comprises of the following:

- Self-reliance.
- Regional Cooperation.
- External Assistance.

SELF-RELIANCE. Being an independent nation and dictated by its sovereignty and national interest, Malaysia adopts self-reliance defence policy to meet any immediate eventualities inspite of having collective security arrangements and agreements. External assistance would only be resorted to depending on the level and degree of threat and if it goes beyond the capability of our MAF. As such, self-reliance should continue to be maintained as the core of our defence policy.¹⁰

REGIONAL COOPERATION. Malaysia with matured and wide experience political leaders at the helm, recognizes that the most effective means of ensuring development and stability is non other than apart from practising self-reliance, is maintaining peaceful relations with its neighbours, particularly within the Association of South East Asian Nations (ASEAN) members and the world on the whole.

Malaysia being strategically and centrally located, share common borders with all its ASEAN community. It is aware that any threat to any of its members, would be considered a threat to its security, relating to a possible spillover effects, such as refugee problem and also other socio-economic difficulties.

To face and to overcome this security possibilities, Malaysia should be able and be prepared to play its part in regional defence cooperation, through positive involvement of its armed forces, taking into consideration as to fulfil the strategy of forward defence. This defence cooperation undoubtedly exist as of today, but it should be enhanced and further developed of which could assist in the process of a better confidence building among the member countries of the region.¹¹

EXTERNAL ASSISTANCE. Malaysia is known for its foreign policy standing as being non-alignment, of which has been projected worldwide through its membership of Non-aligned Movement (NAM) and Zone of Peace Freedom and Neutrality (ZOPFAN) in Southeast Asia.

However, being conscious of the security instability within the region, what more with the pull-out of the superpowers and the steady encroachment of the major powers, Malaysia certainly do need some kind of security assurance, in particular in the form of fundamental basis of external defence assistance, such as the one having with the Five Power Defence Arrangement (FPDA), even though it is not a defence pact.¹²

Apart from indirectly being part of our deterrent structure, FPDA provides an overall defence cooperation among its members in particular an extensive consultation and planning, especially in air defence. This foregoing arrangement considered as a source for extended assistance should not only be retained but further maintained as to ensure our regional security and stability.

So much on the fundamental elements of the defence policy. But, when we refer to defence policy, on what aspect or what are we really defending? What is it that made us beef-up our defence capability and be prepared to die for? This, what we are referring to, is none other than the National Interest.

NATIONAL INTEREST

There are several factors that are taken by the policy makers in deriving at the national defence policy, such as national interest, threat perception, and perspective of the external strategic situation. Above all, is the national interest. Malaysia's vital interest are the preservation of its core values, that is, national survival and well being, sovereignty, independence and territorial integrity. This will be discussed later.¹³

To ensure appropriate measures taken to defend the national interest, a call for a strategy for defence need to be adopted.

STRATEGY FOR DEFENCE

As laid out in our National Defence Policy, strategy for defence, comprises of:

- Deterrence
- Forward Defence
- Total Defence

Before venturing into the strategy mentioned, let us first get the correct understanding of strategy.

Clausewitz definition of strategy as the use of engagements for the object of the war. Liddle Hart, in his book *Strategy of Indirect Approach*, paraphrased it as the art of distributing and applying military means to fulfil the ends of policy.

Let us now look into the understanding of this strategy and how it meaningfully comes into play. Firstly, on deterrence.

DETERRENCE. To R.J. Overy, the writer on "Air Power and the Origins of Deterrence Theory before 1939", the roots of the modern theory of deterrence are to be found in the evolution of strategic air power before World War II. Deterrence is as old as fear itself; but as a formal description of a strategic aim it dates from the 1950s superpower confrontation. Though the concept is often used loosely, deterrence is generally taken to mean a strategic ambition in which a putative aggressor is deterred from military attack by fear of the consequences, not just for his own military forces but for his society as a whole. Expressed in this way, deterrence can only work if the threat of military retaliation is credible, and if there are no doubts about the political intention to use it. Deterrence is the effect, but it is credible and devastating war capability that produces it.¹⁴

FORWARD DEFENCE. The idea of forward defence as practice by the Australian is of meeting threats at a distance from its shores, by maintaining garrisons in Southeast Asia and at the same time applying continental defence indicating that Australia's armed forces are very much concerned with their defence on their own, implying to non-alignment, closer association with regional powers such as ASEAN or partnership with Japan.¹⁵

Australia and New Zealand on the other hand wish to continue the limited defence presence in Southeast Asia in order to maintain familiarisation about the neighbouring area which they considered as their forward defence zone.¹⁶

Malaysia and Singapore likewise, come un-

der the umbrella of FPDA which are indirectly linked with ANZUS. But they do not think much of Australia's or New Zealand's military aid under this arrangements. What more of military cooperation has already been very much curtailed and in course of time it will completely end.

Apart from mentioning on forward defence, which is a form of capability enabling to engage the enemy well forward, it is interesting to note that even in 1969, Tun Razak was already talking about **pre-emptive strike**, another possible form of hitting the enemy, before it gets too close, to our shore, for comfort:

"it is necessary for us to have an Air Force that is capable of striking at the enemies should they attempt to aggress our country and against any possible attack."

I tend to feel that it must be mentioned here that when we talk about **forward defence**, be it the military way or the civilian style of understanding, it boils down to none other than the interest of **Centre of Gravity**. The idea of having our forces deployed well forward, such as within our friendly neighbouring states, will more or less enable to assist our air capability to carry-out much more successful strikes against the enemy's **centres of gravity**. But, what do we know of centres of gravity?

Centres of Gravity are the key to targeting. A centre of gravity is the point where the enemy is most vulnerable, which if successfully attacked is not likely to bring about his defeat. If there are numerous centres of gravity, they may all have to be successfully attacked for the objective to be achieved.¹⁸

When identifying centres of gravity, commanders must remember that **military operations are conducted to help achieve political objectives**. Because political and military objectives are determined by the command structure - a nation's ruling elite - the nature of conflict will be affected by

the extent to which each side can influence the other's elite.¹⁹ It must be noted that the national political/military leadership will make decisions on the cost-benefit relationship associated with the conflict.²⁰

In other words, **the ability to identify and attack those components of a command structure most relevant to waging war should be the priority**. Centres of gravity are both strengths and weaknesses. An analysis of generic strategic centres of gravity indicates that they can be presented by five concentric rings. Starting at the innermost and most important ring and looking outwards, are:

- command/leadership
- key production, especially electricity and oil.
- the transportation system.
- popular support.
- fielded military forces.

Those are **strategic centres of gravity**. Centres of gravity also exist at the operational and tactical levels of war, where the goal should still be to **influence the operational or tactical level command structure**. Targets which maybe crucial to one nation or culture may be of little importance to another. The key is to try to get inside the enemy's head and determine what is vital to him. **Country briefs** prepared by specialists are a valuable tool here.

TOTAL DEFENCE. Next, the commonly heard **Total Defence**.

"We must develop our own resources - political, economic and defence resources more rapidly than we have been doing. This will give our foreign policy a foundation which will make us more effective both in protecting our own immediate interests and in contributing as a member of the international community."²¹

(Continue, please turn to page 70)

*(Malaysia's Defence Policy Posture -
continue from page 54)*

To achieve the above, it is felt that there is no other easier way out, other than pursuing the concept of Total Defence. The elements for Total Defence are as follows:

- Social defence.
- Economic defence.
- Psychological defence.
- Civil defence.
- Military defence.

What do we understand of Total Defence? In his book "Nation in Arms", Adam Roberts defined his understanding of Total Defence as practise by Sweden, is total in an organisational sense: it does involve almost every aspect of society, rather than merely being the affair of professional armed forces. Defence considerations affect the economy, agriculture, the electrical network. Swedish defence preparation are based on the recognition that wars can affect all citizens, and all citizens can contribute to the war effort, the adjective total is an apt description of the defence system.²²

Apart from Sweden and Singapore, Yugoslavia too practises Total Defence but it is commonly known as **General People's Defence**, of which clearly stated in its 1963 Constitution stipulating that defence is not only the responsibility of the armed forces. The defence of the country is both the right and duty of citizens, work and other organizations, the Federation, Republics, Communes and other socio-political communities.²³

According to another writer, **Hans H. Indorf**, relating to total defence, a small state cannot find security in mere numerical equivalents of diverse

weapon system or the speculativeness of presumed threats. The acquisition of military hardware, the implementation of a national service, or efforts to improve civil defence can be just tactics in search of a comprehensive strategy. The philosophical foundations for security must be viewed in a total context. The ultimate criterion for policy is survival, not victory. The evolutions of a defence concept involves the citizenry as much as the international community.²⁴

NATIONAL STRATEGIC INTEREST

It must be clearly viewed and understood that in formulating its defence policy, it is based on the need to protect the areas of national strategic interest. In our context, it is divided into three layers, namely:

- The core area encompasses land, water and airspace connecting the country's two regions, the EEZ and the Straits of Malacca and Singapore.
- The Southeast Asia region.
- Global.

It could be derived that Malaysia's area of strategic interest starts with own territory, to be followed by immediate vicinity of Malaysia, particularly within the ASEAN members and the Southeast Asia region, and finally global relating to Malaysia's foreign policy. For detail reading and understanding, please refer to Review of National Defence Policy, May 1991.²⁵

INTERNAL THREATS

Despite of having gone through the tragic May 13 1969 racial violence and the imposing of the Internal Security Act (ISA), Malaysia continues but at a much lower scale, to face internal threats towards its national unity and harmony. There are still on going issues being fully exploited by political parties and if it goes unchecked, the situation could deteriorate resulting a possible of another outbreak of violence.

Apart from political rivalry and problems on illegal immigrants, faced by the government, Malaysia currently is also confronted by a banned fundamentalist movement, the **Al Arqam**, led by **Ashaari Muhammad**, who claimed to have met and received instructions from **Prophet Muhammad**. This organisation with a 8,000 members group, is regarded by the Malaysian Inspector General of Police, **Tan Sri Rahim Noor**, as a threat to the country's security due to its dubious teaching. The ISA, which provides detention without trial for up to two years or more, might be imposed upon this group if the situation persists.²⁶

Apart from this internal threat indications, Malaysia also needs to keep an eye on a possible unexpected **spillover** internal threat coming from the southern **Philippines** and also from the southern **Thailand**.

The **CPM**, one of the oldest communist parties in the region, signed a peace accord with Malaysia and Thailand on **2 December 1989**, to formally declare an end of its armed struggle.²⁷

With the current termination of armed struggle by the **CPM**, it more or less indicated that Malaysia could now focus and concentrate more on external threat than the prolong insurgency threat.

EXTERNAL THREATS

"It is the ability of a society to perpetuate its existence and sustain its values in the face of threats and challenges from internal or external sources."²⁸

Without the physical presence of the **US** in the South China Sea and the demise of the **Soviet Union**, a much closer look need to be focused onto the current three major powers of the East, referring to **India**, **PRC** and **Japan**. The Indians are projecting herself in dominating the Indian Ocean with special interest towards the **Andaman Island**, a strategic position overlooking the entrance to the **Straits of Malacca**. The **PRC**, on the other hand, in

the process discarding its "**Brown Water Navy**" and heading towards the "**Blue Water**", had flexed its muscles and repeatedly warned Vietnam to withdraw from the **Spratlys**.

The conflicting claim issue is further compounded by the Chinese who had begun to exert their claim of total right on the entire islands and reef in the **South China Sea** based on historical evidence.³⁰

The **Japanese** on the other hand, since being given the clearance and encouragement to be part of their own defence responsibility alongside their close ally the **US**, the **Japanese Self-Defence Forces**, have seriously look into their defence interest, but not without drawing concern among its neighbours.

"...to do more for their own defence, to do more to protect their own interest, to do more to protect their own sea lines of communication."³¹

The other protruding threat, irony, comes from our neighbour the **Philippines**. Manila staked a claim to **Sabah** in **1962**, a year before the territory joined Malaysia. **Sabah** was ruled by the **Sultan of Sulu** in the Southern Philippines until **1878**, when it was leased to what was to become the **British North Borneo Company**. **Kuala Lumpur** continues to pay a token rented to the **Sultan of Sulu**. But insists the Philippines has no sovereignty over **Sabah**. In **1977** **President Marcos** visited Malaysia for an **ASEAN** summit and vowed to take steps to drop the claim. He never did. His successor **Corazon Aquino** too wanted to forget the claim but the **Philippine Senate** would not allow her. Likewise, **Ramos** is being held back by the Senate.

Other pertinent threats relating to Malaysia's security is the conflicting claim in the South China Sea, and the inter-state sovereignty disputes between **Malaysia-Singapore** and **Malaysia-Indonesia** which remain to be contentious issues.

Relating to these issues, I supposed I need to highlight another important aspect that could create a very much unwanted security instability within this region, that is **conflicts**. Favourable prospects for continuing global stability within this region, is the limitation of local conflicts and it comes in various varieties. Let us divert for a while and look into this, for it might sound simple but it could turn into something we do not wish.

Conflicts can appear and assume critical importance very quickly and without much warning as a result of threatening problems such as the energy crisis, the growing disparity between rich and poor, chronic food shortages in parts of the world, population growth, inflation, recession and nuclear proliferation. War often decides who gets what; the power ratio when the shooting ends settles whatever issue at state. But war is no longer the ultimate ratio in the nuclear age. Crisis is now the substitute for war as the continuation of politics by other means.³²

Crisis serve a purpose when war is no longer the instrument of last resort. In a bipolar distribution of power, a large crisis now is better than a small war later. A crisis is evidence that the balance is being kept.³³

An international crisis is international politics in microcosm. That is to say, a crisis tends to highlight or force to the surface a wide range of factors and processes which are central to international politics in general. Such element as power configurations, interests, values, risks, perceptions, degrees of resolve, bargaining, and decision making lie at the core of international politics; in a crisis they tend to leap out at the observer, to the combined and related in a revealing way, and to be sharply focused on a single, well defined issue.

Crisis is a situation in which one state demands a change in the status quo and the other resists, creating a heightened perception of the possibility of war. In such a confrontation, each party tests the other, takes the measures of its adversary by means of manipulation or risk. Successes or setbacks in individual tests are equivalent to victories and defeat in war.³⁵

Lastly, we have **Crisis management** which is concerned on the one hand with the producers for controlling and regulating a crisis so that it does not get out of hand and lead to war, and on the other with ensuring that the crisis is resolved on a satisfactory basis in which the vital interests of the state are secured and protected.³⁶



Lt Kol Mohd Kamal Omar was commissioned into the Royal Armoured Corps in 1967. Attended Staff College in Quetta, Pakistan and the Armed Forces Defence College (MPAT). Other overseas stints include the Armoured Gunnery Instructor UK, the International Senior Officers Amphibious Planning Course San Diego, USA, attached to the Australian Armoured Centre, Puckapunyal and served as UN observer in Iraq and Mozambique. Earned his Advance Diploma in Strategic Studies from UKM. Currently serving as a Directing Staff at MTAT.

Part II of this article:

Shift in Defence Policy Posture / Recommendations will be published in next Issue: 28/1995.

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LASER IN DENTISTRY

Introduction

'LASER' is an acronym for "Light Amplification by Stimulated Emission of Radiation". It was demonstrated by T.H Maiman in 1960. Since then, lasers had been applied in many fields such as in industries of automotive, aerospace, clothing where it is used to cut, mend and scribe materials.

In the field of dentistry, this new technology have seen a marked increase in its use in dentistry, especially in soft tissue dental surgery. It is light source which is monochromat coherent and directional. When focused, it imparts tremendous energy onto the targeted spot and immediate vaporisation of tissue occurs.

Clinical lasers are of two types:

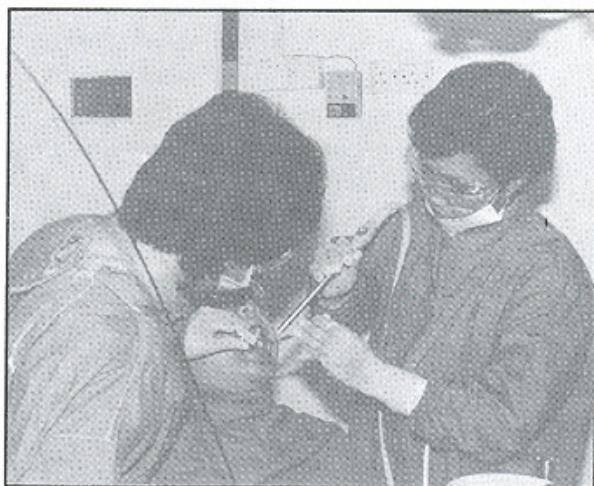
- * Soft lasers and
- * Surgical hard lasers.

The soft lasers are unit light in the visible or near infrared region of the spectrum. Its principle use is in the management of pain, both directly by laser acupuncture and in promoting wound healing. This includes helium - neon (He Ne), argon and ruby.

most beneficial one is the CO2 laser hard laser which gives a favourable biological response - there is minimal bleeding, pain and swelling. It is widely used in dentistry.

Present Capabilities Of CO2 Laser In Dentistry

In the field of dentistry, it can be used in hard tissue and soft tissue surgery.



Preoperative view with Laser tip in position

On hard tissue, the laser can:

- * Sterilize tooth surfaces.
- * Etch enamel.
- * Desentization of root surfaces.
- * Endodontic procedures.
- * Caries removal.

On soft tissue, the laser is being used successfully for:

- * Gingival excision and incision eg. gingivectomies and gingivoplastics.
- * Frenectomies.
- * Gingival curettage.
- * Operculectomies.
- * Biopsies.

- * Gingival troughing for crowns, bridges and implants.
- * Oral infection therapy.

The Advantages

The advantages of the system are as follows:

- * It allows a sterile, precise, no-touch technique.
- * Because blood will coagulate at the high temperatures produced by the laser, there is less blood loss and a clearer surgical field compared to the conventional scalpel.
- * Lack of tissue damage which means there will be less scarring, less post-operative oedema and less pain.
- * Superficial wounds have been found to heal more quickly than those produced by scalpel or diathermy.

Laser Safety

Certain safety regulations must be observed when using laser. It is potentially hazardous to the operator, patient and other members of the team.

- * Warning signs must be exhibited outside the door when it is in use.
- * Protective glasses is a must for everyone to protect the cornea for risk of laser damage.
- * A special endotracheal tube should be used to prevent ignition of gases.
- * Flammable material, swabs and cotton should be kept moist.
- * Instrument should be non reflective.
- * The laser plume has been shown to contain able cancer cells and AIDS virus. Adequate suction and special laser masks is essential.



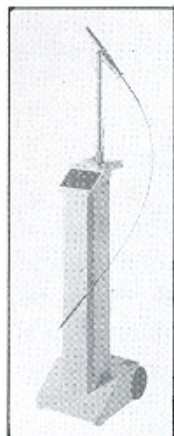
A dental officer is seen here operating the laser unit.

Conclusion

The many advantages of laser makes it unquestionable choice for multiple soft tissue and hard tissue oral procedures. As laser research and development continue, the laser should become a common surgical root in all dental surgical specialist office.

This will be a breakthrough for dentistry, since so much of the public's fear of dentistry is associated with noise and pain.

At present, Armed Forces Dental Centre in Mindef provides laser dental treatment especially on selected soft tissue surgeries, treatment on sensitive teeth and in root canal treatment procedures.



A Dental Laser unit available at PGAT Kementah

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Mej (Dr) Roza Anon bt Mohd Ramlee telah ditauliahkan ke Kor Kesihatan ATM pada 2 Okt 90, sebaik sahaja menerima Ijazah Pembedahan Pergigian (Bachelor of Dental Surgery) dari Universiti Malaya. Beliau kini memegang jawatan Pegawai Pergigian di Pusat Pergigian Angkatan Tentera, KEMENTAH. Kecenderungan dan Kepakaran beliau ialah di dalam rawatan 'Dental Laser dan 'Endodontics'.