CHAPTER 5 - SUGGESTIONS

5.1 INTRODUCTION

"An Act to make further provisions for securing that safety, health and welfare of persons at work, for protecting others against risks to safety or health in connection with activities of persons at work, to establish the National Council for Occupational Safety and Health, and for matters connected therewith"

(Laws of Malaysia – Act 514, p.5)

The above is the introduction paragraph of OSHA 1994. Its guiding principles and philosophy are self-regulating, consultation and worker co-operation and participation. Furthermore, under the Act, organisations are compelled to:

a. Formulate a safety system.

b. Assess the task required.

c. Identify the hazards.

d. Define safe methods.

e. Implement the system.

f. Monitor the system.

Although the OSHA 1994 is not applicable to the Malaysian Army, it does not mean that the Malaysian Army cannot use the same guiding principles and philosophy. In the spirit of OSHA 1994 (worker co-operation

and participation), this chapter provides the suggestions on how to eliminate and control the impact of OSHH in the Malaysian Army.

Thomas Peters and Robert Waterman gave us fair warning about quick fixes. In their book, *In Search of Excellence (1982)*, they wrote, "*The failing is often attributed to 'the unions' or 'lack of employee goodwill'. Seldom it is attributed to the lack of persistence and true caring on the part of management*" (Ezell 1992, p. 151). In ensuring our suggestion do not fall into the category of quick fixed, we have come up with a long-term program, which we call it, ***Malaysian Army Health Hazard Assessment Program.*** Essentially, the Malaysian Army Health Hazard Assessment Program is based on the United State Army Health Hazard Assessment Program. Technically speaking, we have taken the U.S Army Health Hazard Assessment Program and adopted it to suit the Malaysian Army environment.

5.2 MALAYSIAN ARMY HEALTH HAZARD ASSESSMENT PROGRAM

One of our suggestion is the need for the Malaysian Army to establish a ***Health Hazard Assessment Program*** to eliminate or control health hazards in the life-cycle management of weapons, munitions, equipment, clothing, training devices, other material, and information systems and to integrate human performance criteria into these areas. These suggested efforts to eliminate health hazards from material systems links the Health Hazard Assessment Program with Malaysian Army war fighting capabilities and performance. The Health Hazard Assessment Program supports the four elements of combat power: manoeuvre, firepower, protection, and leadership.

It also supports the entire breadth and diversity of the Malaysian Army technology base.

The Health Hazard Assessment Program should be an integrated effort that supports mission needs, concept analyses, research, development, testing, evaluation, production, procurement, training, use, storage, system maintenance, transportation, demilitarisation, and disposal issues throughout the life cycle of a system. Its specific objectives are to:

a. Preserve and protect the health of individual soldiers,

b. Enhance soldier performance,

c. Maximise system effectiveness,

d. Enhance the original system design to eliminate health-hazard-based retrofits,

e. Reduce readiness deficiencies attributable to health hazards, thereby eliminating training or operational restrictions,

f. Reduce personnel compensation claims by eliminating or reducing injury or illness caused by health hazards associated with the use of Army systems,

g. Reduce health hazards that may affect soldier sustainment and survivability, and

h. Reduce environmental contamination and potential health hazards attributable to Army systems.

Health hazard issues, if not managed effectively, will consume funds needed elsewhere, delay system introduction, and limit training and

mobilisation. Faster, longer range, and higher technology weapon systems and other highly sophisticated material systems will be developed in the future. More than 1,000 systems are currently under development or in product improvement. We anticipated a decrease in the number of majors systems but an increase in the number, complexity, and flexibility of newly acquired systems. These new sophisticated systems will meet the Malaysian Army's future needs as its make the transition to a smaller force with an enhanced quick-response capability. Such systems will present greater health hazard challenges that can be met only with additional personnel and funding.

A formal strategy that concentrated on the four pillars of prevention, protection, performance, and sustainment and survivability, shall focus the Health Hazard Assessment Program efforts on the critical actions necessary to provide material systems free of health hazards to our trained and ready Army. We cannot produce systems free of health hazards without consistent command support and commitment and the integration of health concerns into all Malaysian Army operations and activities. This Health Hazard Assessment Program provides the necessary strategy needed to meet the growing health hazard challenges of the next century. This strategy is to be used as the basis for the formulation of the various action plans that implements this strategy. The following action plans are suggested:

a. Perform health hazard evaluations on all systems.

b. Develop adequate resources to implement the program.

c. Review and revise policy and operating documents.

d. Increase communications with combat and material developers.

e. Provide health hazard input to support all milestone decision reviews.

f. Focus medical research and development efforts on material developers' needs.

g. Develop an information management system that meets program management and technical needs.

h. Increase the technical and managerial skills of program personnel.

Currently, the assessment of health hazards has been looked upon as the sole responsibility of the Malaysian Armed Force Medical Directorate. They should lead the effort in identifying and recommending control of the health hazards associated with military systems, but everyone involved with the Malaysian Army's acquisition system such as acquisition managers, and combat and material developers are also responsible for controlling health hazards. Identification and control of these hazards must be a team effort. We may risk producing substandard products if the team does not consider health hazards, other Malaysian Army domains like human resource, operational, logistic and planning should be integral parts of the life-cycle management of material systems. Health hazards that are not controlled will affect the one resource we cannot afford to risk, the soldier.

This comprehensive strategy provides a structure and framework for the Malaysian Army to meet the growing health hazard challenges we will

face as we enter the next century. A formal strategy focusing on prevention, protection, performance, and sustainment and survivability provides the mechanism to gain the resources and emphasis required to implement a fully functional program, accomplishing the program objectives, and attains the goals and vision.

5.2.1 VISION STATEMENT

Suggested Vision Statement:

"The Army Will Be The National Leader In Eliminating Health Hazards From And Integrating Human Performance Criteria Into The Life-Cycle Management Of Material Systems."

The above vision statement would communicated the Malaysian Army's commitment to control health hazards and integrating human performance criteria into the material acquisition process and pledges its role as a leader in that effort. The vision is intended to inspire, direct, and empower Army personnel at all levels to participate in managing change to ensure the future success of this program and the Army.

Throughout the Malaysian Army's OSHH strategic planning process, three main values and themes should always be considered:

a. Demonstrating leadership

b. Eliminating or controlling health hazards

c. Enhancing human performance in material systems.

These fundamental values are an integral part of the Malaysian Army

mission and are reflected in the Malaysian Army Health Hazard Assessment Program vision statement.

5.2.2 THE MODEL

We have use a model for the Malaysian Army Health Hazard Assessment Program, which is similar to the model, used by United State Army Health Hazard Assessment Program. Figure 5.1 shows the model used. The model consists of a building with four pillars supporting the program and the Malaysian Army mission and, in turn, being supported by various programs and managerial elements.

The overall Malaysian Army mission is to protect and defend the nation and its fundamental values. Supporting that mission is the Health Hazard Assessment Program, whose goal is to eliminate health hazards from Malaysian Army systems. The four pillars symbolise the activity areas to which the Malaysia Army will devote primary emphasis, and the foundation of the model is composed of key building blocks that represent the infrastructure needed to support an effective program.

5.2.3 STRATEGY

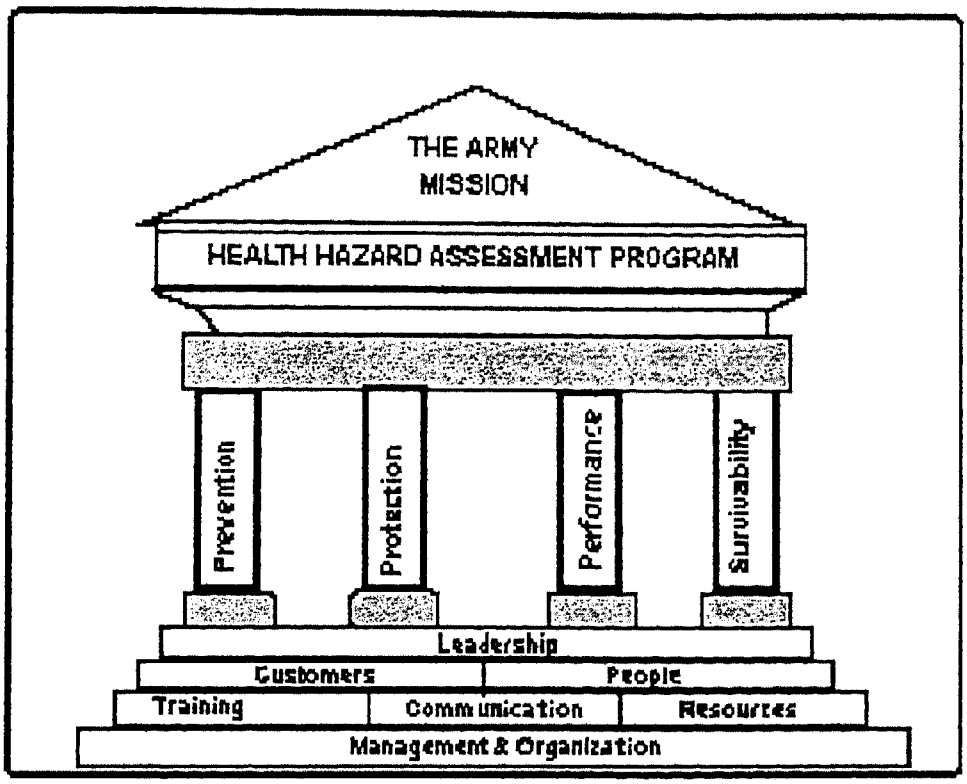
The Health Hazard Assessment Program strategy provides the Army with the direction it needs to attain its vision. It offers specific goals, objectives, and actions and harnesses the strengths of the Army and its command leadership, organisation, and commitment to move rapidly to realise the vision. The Health Hazard Assessment Program strategy focuses on four pillars, or activity areas:

a. Prevention

b. Protection

c. Performance

d. Sustainment and Survivability.



Source: Literature Research

Figure 5-1 Malaysian Army Health Hazard Assessment Program Model

The stability of each pillar depends upon the support provided by a foundation of various programs and managerial elements. Those foundation elements are leadership, customers, people, training, communication, resources, and management and organisation.

The strategy, however, is more than far-reaching vision, goals, and objectives. The Health Hazard Assessment Program strategy is implemented

through the 10-Year Army Strategic OSHH Action Plan. It is suggested that the Malaysian Army developed this action plan. The 10-Year Army Strategic OSHH Action Plan should establish the major actions, projects and activities, resources, and schedules for implementing the strategy. Those major actions are linked to the various pillars, goals, objectives, and actions shown below at each of the foundation elements. They are supported by specific tasks and, in some cases, sub-tasks that must be performed to implement the strategy. The major actions, their tasks, and sub-tasks are addressed in priority order in the plan. Timelines for performing the tasks are provided, and responsibilities for each task are assigned to support personnel and activities.

The 10-Year Army Strategic OSHH Action Plan integrates ongoing, new, and unresolved activities into one comprehensive program management document. It is the primary means for identifying additional strategic health hazard issues and monitoring the progress of the program in implementing the strategy. Management indicators are used to rate the status of each major action in the plan. These statuses are to be presented to the Malaysian Army leadership on a regular basis.

The 10-Year Army Strategic Action Plan covers a period that corresponds to the Malaysian 10-year plan. This plan is the primary vehicle for identifying the budgetary requirements for meeting the Malaysian Army Vision and the goals and objectives of the Health Hazard Assessment Program.

It is suggested that the Malaysian Army Human Resource Department (Cawangan Sumbar Manusia Tentera Darat) is held responsible to develop this 10-years strategic OSHH action plan. Therefore, the Malaysian Army Human Resource Department (Cawangan Sumbar Manusia Tentera Darat) needs to continually do planning, organising, leading and controlling the newly develop action plan toward its attaining the objectives and goals of the Health Hazard Assessment Program strategy. They are required to provide annual program status report to the Army leadership. The various management indicators used should be tracked regularly as part of their action plan.

It is suggested that the Malaysian Army used the framework set forth in the strategy to dramatically decrease and control health hazards in material systems and integrate human performance criteria into the life-cycle management of these systems. Such a strategy emphasises the Malaysian Army's commitment to fielding systems that are free of unacceptable health risks and becomes an important part of the overall Malaysian Army mission. It will be the basis for planning, programming, and budgeting decisions to support the Malaysian Army's Health Hazard Assessment Program. It is suggested that the Deputy Chief of the Malaysian Army to receive periodic briefings on the implementation of the suggested strategy.

5.2.4 PILLARS

The success of the Malaysian Army's Health Hazard Assessment Program depends upon the support provided by each of the four pillars, or

activity areas: prevention, protection, performance, and sustainment and survivability. In each area, we have suggested a goal and supporting objectives. The goal summarises the intent of the activity area and addresses opportunities for improving and enhancing specific aspects of that area.

The objectives in each of the four activity areas are the incremental steps needed to meet the broader goal. Within each objective, we have suggested some actions that are needed to achieve the objective.

5.2.4.1 Prevention Pillar

The Malaysian Army must strive to field material systems that are free of health hazards and that enhance human performance and prevent environmental contamination. Prevention emphasises the elimination of hazards early in the developmental process. It also includes actions to control hazards within acceptable limits. Common preventive measures include elimination or product substitution, isolation of the user from the harmful agent, enclosure of the harmful process, provision of adequate ventilation to remove combustion products or vapours, and changing the process to reduce the hazards.

The prevention process has two key elements:

a. Identification of potential health hazards early enough in the design process to eliminate or control them.

b. Integration of the health hazard assessment process into all phases of the life-cycle management of resources. The Army must place special emphasis on certain critical events in the life cycle:

design, testing, manufacturing, operation, maintenance, storage, demilitarisation, and disposal.

The goal of the prevention pillar is to eliminate or control health hazards in all Army systems through a process of early identification and continuous evaluation.

We suggest the following objectives and supporting actions to be set for the prevention pillar:

a. To prevent occupational and environmental health hazards. The suggested supporting actions are as follows.

(1) Influence critical design and acquisition documents [e.g., standards, specifications, test plans, operational requirements documents, statements of work (SOWs), and requests for proposals (RFPs)].

(2) "Design out" demonstrated occupational health hazards (by means of elimination, substitution, process change, etc.).

(3) Identify pollution prevention opportunities in all health hazard assessment actions.

(4) Eliminate or reduce hazardous substances and other health hazards in weapon system acquisition programs (e.g., new acquisition, modifications, upgrade, system change, and non-developmental items).

(5) Eliminate or reduce hazardous substances and other health hazards in weapon System management.

b. Participate early and continuously in the life-cycle management process. The following are the suggested supporting actions for this objective.

(1) Develop a strategy for providing health hazard input for non-developmental items and government- furnished equipment.

(2) Assist preventive medicine personnel in their efforts to provide early health hazard input to combat developers.

(3) Develop approaches for special-access and Joint-Service programs.

(4) Support key milestone decisions by providing health hazard input to key activities and documents.

Figure 5-2 below summarises the prevention pillar.

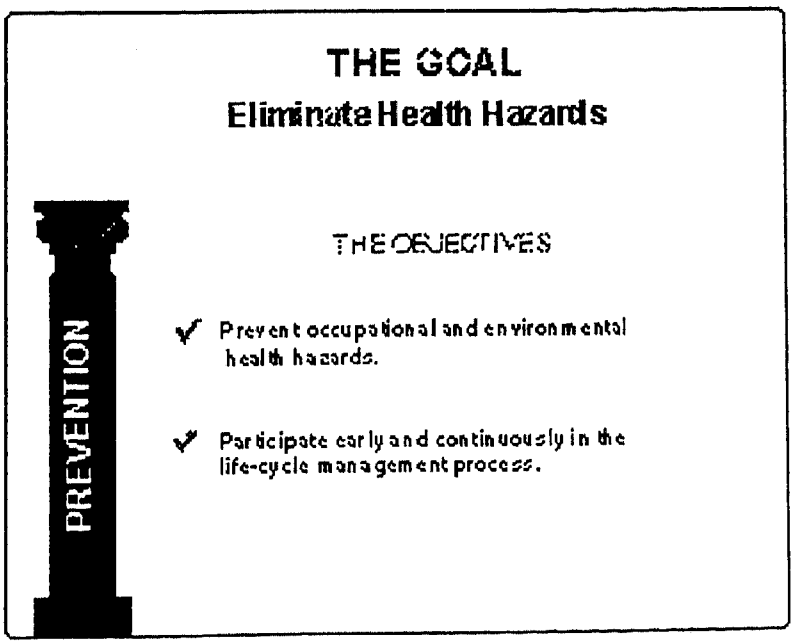


Figure 5-2 – Prevention Pillar

5.2.4.2 Protection Pillar

The Malaysian Army should seek to apply control measures to minimise any hazards that cannot be completely eliminated from material systems. System design standards, human performance standards, and other health-related guidelines are used to specify the control measures. However, none of these criteria by themselves are sufficient to develop adequate health hazard controls. These standards must be complemented with effective surveillance and evaluation programs to validate the performance of the control systems and verify that personnel are adequately protected.

In this context, surveillance is the continuing process used to determine the types of hazards present in military systems and the extent to which they can adversely affect health; evaluation is the detailed process of comparing a system function with its design specifications and human health exposure criteria. In the event surveillance indicates that a system's controls do not function properly, the system must be modified to meet design and health standards. Some common modifications to current controls used in material systems include increasing ventilation, enclosing hazards, altering work practices to avoid or reduce exposure to the hazard, using protective clothing and equipment, requiring the use of administrative measures such as limits on the lengths of work shifts, training personnel, and posting warning signs.

The use of military systems often results in the creation of military-unique hazards (blast over pressure, for example). Thus, the development of

military-unique health criteria is another important focus of protection. We suggest that the Armed Forces Medical Directorate and Pusat Sain dan Teknologi Pertahanan jointly establish Army Medical Research and Development (R&D) programs. These Army Medical Research and Development (R&D) programs should be tasked to develop criteria for military-unique systems, their close co-ordination with material developers is critical. The Medical R&D activities must maintain current technical information databases, conduct applied research to determine acceptable exposure levels, and stay at the cutting edge of medical technology.

The goal of protection pillar is to eliminate or reduce injury and illness attributable to health hazards in Army material systems and to reduce their associated compensation costs.

The following are the protection pillar objectives and supporting actions:

a. Anticipate, identify, evaluate, and control health hazards in Army material systems. The following are the supporting actions for this objective:

(1) Perform health hazard assessments of all Army systems.

(2) Develop and implement effective risk assessment code procedures.

(3) Identify the need for military-unique system health standards and establish those standards.

(4) Develop health hazard domain exit criteria for each milestone decision review.

b. Establish a feedback and lessons-learned network throughout the acquisition community. The following are the supporting actions:

(1) Monitor Malaysian Army's accident reports.

(2) Monitor occupational health and environmental health injury reports.

(3) Relate health hazard assessment report historical data to new systems.

(4) Establish systems for tracking customer responses to the suggested Health Hazard Assessment Program report recommendations.

c. Enhance the health hazard assessment process with the use of science and technology developments. The following are the supporting actions:

(1) Develop a surveillance program database that integrates human performance with material system configuration data.

(2) Integrate the health hazard assessment database into the Occupational Health Management Information System (OHMIS).

(3) Monitor and develop biological indicators of potential exposures.

(4) Develop health and performance effects databases for Army-unique hazards.

Figure 5-3 below summarises the protection pillar.

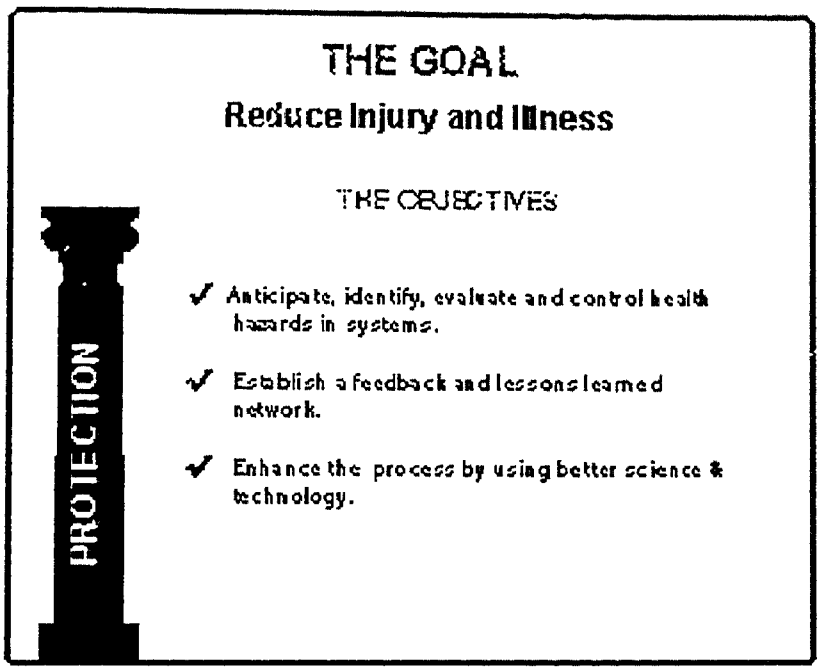


Figure 5-3 – Protection Pillar

5.2.4.3 Performance Pillar

Performance is the primary measure of the effectiveness of military weapons, material, and other systems, based on their design and the ability of the soldier to use them. System performance is primarily a function of how well the system fits the soldier. Thus, performance is determined by the man-machine interface, and that interface is the major focus of the performance pillar.

The integration of human performance criteria into the design of Malaysian Army systems is one of the greatest challenge faced by the Health

Hazard Assessment Program. To establish and apply those criteria, Medical R&D activities and weapon developers must work together closely. Man-machine issues must be identified early in the development process so that medical problems can be isolated and systems adequately tested and redesigned to ensure that their fielding is not delayed.

The goal of performance pillar is to enhance soldier performance and system effectiveness by eliminating health hazards.

The following are the performance pillar objectives:

a. Identify human performance effects and develop performance assessment models to link performance to system requirements. The following are the supporting actions:

(1) Develop methods to predict health-hazard-induced outcomes in systems.

(2) Develop a better linkage between Medical R&D and system developers.

(3) Define the effects of health hazards on human performance.

b. Enhance readiness by reducing health hazards that cause training and operational restrictions. The following are the supporting actions:

(1) Provide early input to the combat developers on potential health hazards in proposed systems and recommend actions to control the hazards.

(2) Provide early input to the Test and Evaluation Master Plan (TEMP) and other key testing documents to ensure that required health hazard assessment data are collected and evaluated.

(3) Provide early input to the development of training, operational, and maintenance manuals for each system.

(4) Provide material developers timely recommendations for controlling health hazards.

c. Improve engineering designs so that system retrofits to control or eliminate health hazards are not needed. The following are the supporting actions:

(1) Define data quality objectives in the test and evaluation activities.

(2) Influence the development/revision/conversion of standards, specifications, and other criteria documents that influence the design of systems.

(3) Influence the development of SOWs and RFPs for weapons and other material systems.

(4) Develop improved system design review procedures that focus on early identification of health-related deficiencies.

(5) Provide lessons-learned design information to material developers.

Figure 5-4 below summarises the performance pillar.

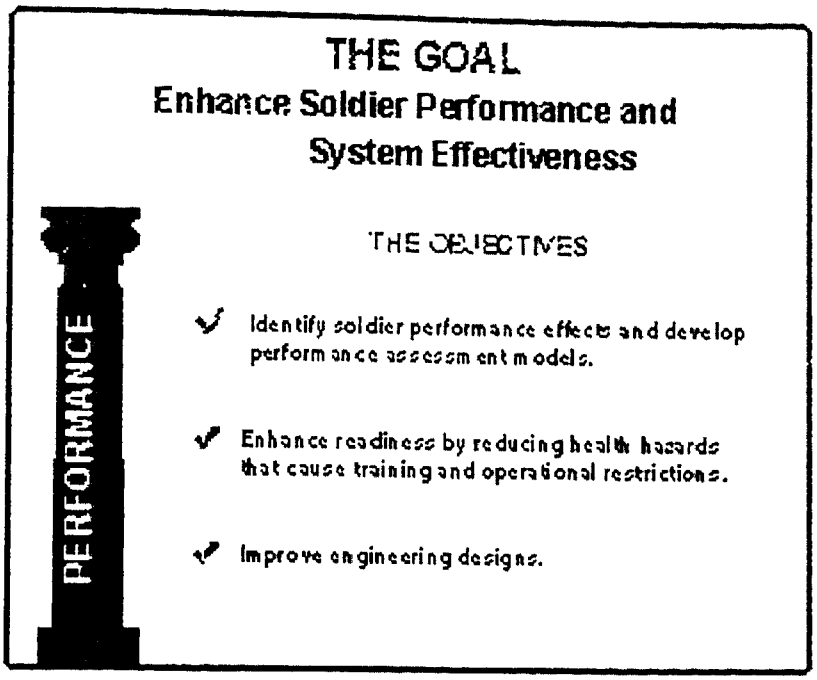


Figure 5-4 – Performance Pillar

5.2.4.4 Sustainment & Survivability Pillar

As for the saying of "*A Total Force Trained and Ready to Fight*" relates to sustainment and survivability. It implies the importance of and necessity for the individual soldier's performing at optimised levels at all times and being capable of protecting himself from the adverse effects of threat weapons and environmental conditions. Sustainment and survivability are defined as follows:

a. Sustainment is the ability to maintain the soldier in a tactical environment. Sustainment systems must be adaptable to all levels of operations on the dynamic battlefield. Features include, but are not limited to, systems such as advanced rations with nutritional tailoring capability to enhance physical and mental performance; individual

water purification systems; improved field feeding systems; and individual soldier power systems.

b. Survivability is the soldier's ability to protect himself against threat weapons effects and environmental conditions. Survivability integrates multiple-threat protection against ballistic, flame/thermal, chemical/biological, directed-energy, surveillance, and environmental hazards. Examples of such systems include microclimate conditioning for the individual soldier to relieve heat stress and enhance productivity, combat soldier identification systems to minimise fratricide, and medical systems that help wounded soldiers remain combat-effective.

c. Soldier sustainment and survivability encompasses the measures taken to enhance individual soldier performance and systems that enable the soldier to withstand or avoid adverse military actions (friend or foe), and/or other effects of the tactical environment. A soldier's ability to withstand an enemy's attack will depend in part upon the nature of health hazards inherent in the support systems. If systems are not designed to enhance soldier performance, then the soldier's ability to withstand an enemy attack will be reduced. Likewise, if the tactical environment involves extreme heat, cold, high altitude, or other environmental threats and the soldier is not equipped with systems to mitigate them, he may not be able to repel or defeat the enemy. The Health Hazard Assessment Program attempts to identify, control or eliminate these health-related issues that have an impact

upon soldier sustainment and survivability.

The Health Hazard Assessment Program strives to define the health-related changes and human performance degradation that result from exposure to environmental or material systems' induced physical, chemical, and biological threats. Establishing human performance criteria for the development and operation of Army systems will enable material developers to better design the man-machine interface and enhance the overall effectiveness of the systems. An optimised system will promote enhanced soldier performance, sustainment, and survivability.

The goal of sustainment and survivability pillar is to improve soldier sustainment and survivability by reducing health hazards and thereby conserving the soldier's fighting strength.

The following are the sustainment and survivability pillar objectives and supporting actions:

a. Define soldier sustainment and survivability health hazards issues. The following are the supporting actions:

(1) Identify and co-ordinate with the medical and non-medical agencies within the combat development, R&D, and acquisition communities that develop soldier *sustainment and survivability* parameters.

(2) Determine the current *sustainment and survivability* program actions in the identified agencies.

(3) Determine how *sustainment and survivability* issues are

addressed in systems under development and provide health hazard input if appropriate.

(4) Define the key health hazard issues relative to *sustainment and survivability.*

(5) Develop the health hazard policy to address these key *sustainment and survivability* issues.

b. Develop models that predict the health impacts associated with soldier sustainment and survivability actions. The following are the supporting actions:

(1) Determine the types of predictive models that should be developed.

(2) Determine the Malaysian Army organisation responsible for developing each model and provide input based on identified health hazards.

(3) Identify and accomplish other Health Hazard Assessment Program co-ordination with identified medical and non-medical organisations.

Figure 5-5 below summarises the sustainment & survivability pillar.

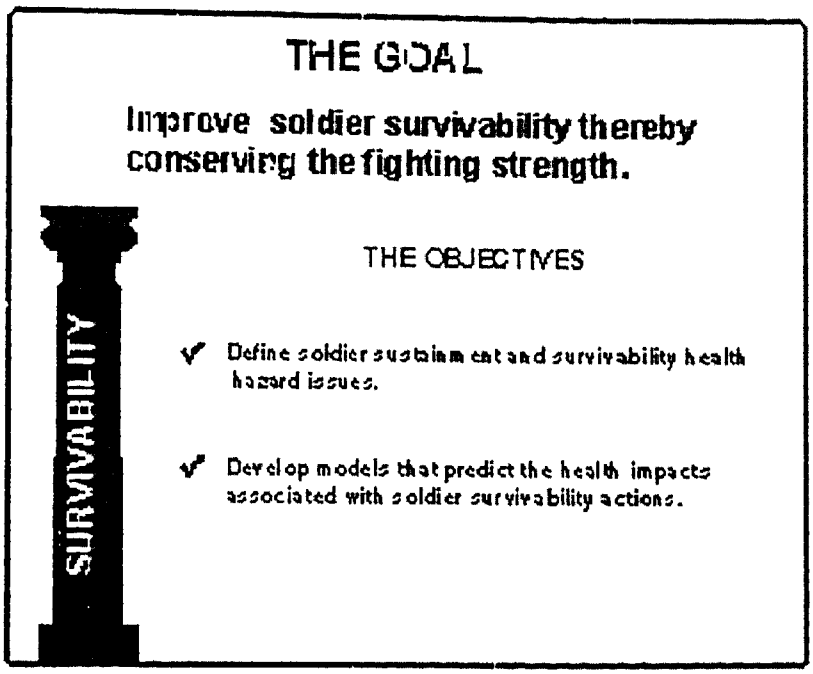


Figure 5-5 – Sustainment & Survivability Pillar

5.2.5 FOUNDATION ELEMENTS

The foundation elements of the Malaysian Army Health Hazard Assessment Program are all essential in achieving success in each of the four pillars of our suggested model. To be effective, the program must be supported by a solid foundation of leadership, customers, people, training, communication, resources, and management and organisation.

In this section, we shall describe each of the foundation elements and its relationship to the pillars and the Malaysian Army Vision. The specific objectives identify areas in which senior Army leadership must provide emphasis to support and strengthen the entire Health Hazard Assessment Program.

5.2.5.1 Leadership

The key to reducing health hazards is leadership at all levels of the program. Leaders must actively support the goals and objectives of the Health Hazard Assessment Program if it is to success. Emphasis must be placed on identifying potential health hazards and the need to control those hazards and to identify the medical personnel to contact for assistance.

Malaysian Army leaders should be committed in eliminating health hazards from all material systems and integrating human performance criteria into the life-cycle management of those systems. In an era of force reduction and budget cuts, we cannot continue to absorb the losses of productivity, delays in fielding systems, and costs of injury and illness that result from preventable health hazards. Senior Army leaders should be committed to eliminate and control system hazards.

The objectives of the leadership element are as follows:

a. To mentor military and civilian personnel in the Malaysian Army, so that they become familiar with the suggested health hazard assessment process.

b. To obtain the leadership commitment to eliminate health hazards from Army systems.

c. To develop an ethic in all workers to eliminate health hazards from Army systems.

5.2.5.2 Customers

The customers' element addresses the important link between those who provide health hazard assessment services and those who benefit from those services. As providers, we must develop better working relationships with our customers and establish effective communication and feedback systems to improve the exchange of information. We must also educate our customers about our expectations. The critical step in this process is the identification of all the customers in the acquisition process.

The objectives of the customers' element are as follows:

a. To identify and educate our customers about the health hazard assessment process and capabilities so their expectations will be realistic.

b. To help the customers understand the need for health hazard assessment of systems.

c. To elicit feedback from customers to improve Health Hazard Assessment Program supports.

d. To provide customers with improved access to health hazard information.

e. To ensure health hazard information is available in developers' guides, other documents, and the Army school system.

5.2.5.3 People

The people element focuses on the need for trained and competent

personnel to support the Health Hazard Assessment Program. These professionals with expertise in science, engineering, logistics, acquisition and other professional disciplines must work closely with the acquisition community professionals to manage and execute a quality program. All Malaysian Army personnel, military and civilian, at all grade levels and all contractor personnel must be properly trained and dedicated in eliminating health hazards. A solid staffing structure combined with a rigorous recruiting and training program will ensure that health professionals are available to support all aspects of the program.

The objectives of the people foundation element are as follows:

a. To recruit quality professionals in sufficient numbers in all disciplines, at all grade levels.

b. To implement a program of continuous professional development.

c. To emphasise teamwork and develop synergy.

5.2.5.4 Training

Training is a critical need for medical personnel and non-medical personnel involved in any aspect of the health hazard assessment process. Currently, the Medical Corp. does not have enough trained medical personnel to meet program requirements. Additional medical personnel must be cross-trained, recruited, and dedicated to the program if it is to success. The Medical Directorate cannot eliminate the health hazards without help from the acquisition, logistics, human resource and operational personnel.

These people must also be trained in eliminating health hazards from the Malaysian Army systems. We suggest that the Malaysian Army increase the amount and quality of training and education of all personnel involved in the program if we are to achieve the objectives, goals, and vision of the suggested program.

The objectives of the training element are as follows:

c. To provide health hazard assessment awareness training to non-medical personnel.

b. To provide health hazard assessment training to Medical personnel.

c. To establish a system to publicise available training courses and opportunities.

5.2.5.5 Communication

Effective communication must be established between all of the organisations involved in the health hazard assessment process. Enhanced internal communication is essential to share technical information in data bases and professional articles, provide consistent and timely technical administration guidance, and maintain an open dialogue on all health hazard assessment issues. Enhanced external communication is needed for effective program management, co-operation with contractors, keeping others abreast of new health hazard assessment medical developments, sharing knowledge and lessons learned, and engaging in joint problem solving.

The objectives of the communication foundation element are as follows:

a. To inform the Army leadership of the trends in and status of the Health Hazard Assessment Program.

b. Enhance technical communication between all medical personnel involved in the program.

c. Improve and promote communication between Health Hazard Assessment Program personnel and personnel within the acquisition community.

5.2.5.6 Resources

This foundation element establishes the objectives for incorporating the Health Hazard Assessment Program requirements into the Malaysian Army Planning, Programming, Budgeting, and Execution System process. Adequate resources in accordance with good business practices are essential to the support, balance, and execution of the four primary activity areas (pillars). Without those resources, the work we suggested in this chapter cannot be performed and the overall program will fail. Resources considerations must be addressed at the foundation level to provide a firm footing for the pillars.

The objectives of the resources foundation element are as follows:

a. To identify, promote, quantify, and gain programming support for validated health hazard program funding and personnel requirements.

b. To maximise utilisation of existing resources.

c. To include health hazard considerations and costs in all decisions throughout the acquisition life cycle.

5.2.5.7 Management and Organisation

Effective management and organisation are necessary to successful execution of the actions in all four suggested activity areas (pillars). The management and organisation foundation element provides the appropriate structures for an efficient Health Hazard Assessment Program that is completely integrated throughout the Malaysian Army. It involves building and maintaining a quality, multi-disciplinary organisation; integrating health hazard assessment policy into all affected Army activities; and interacting with other Federal agencies. Attention to the objectives of this element will ensure the appropriate management and organisational structures are in place to implement this strategy.

The objectives of the management and organisation foundation element are as follows:

a. To determine the most efficient organisational structure.

b. To establish a single office that combines resource management and policy co-ordination for the Health Hazard Assessment Program.

c. To develop an action plan (business plan) that implements this strategy.

d. To build a more effective working relationship with the entire

acquisition and R&D community.

e. To enhance our interdisciplinary approach to health hazard assessment.

f. To develop and document the methods and rationale for health hazard assessments of material systems.

5.3 CONCLUSION

The Malaysian Army Health Hazard Assessment Program must be a very comprehensive program. It defines and reinforces the Malaysian Army's leadership commitment to fielding material systems that are free of uncontrolled health hazards. This strategy provides the framework for actions to ensure that health and human performance considerations are integrated into the life-cycle management of material systems. It is the cornerstone that provides unity of direction and purpose for all Army activities concerned with health hazard issues in the management of systems throughout their life cycle.

The strategy takes its direction from the suggested Army's vision and consists of goals, objectives, and actions. The suggested Army's desire is to be a national leader in eliminating health hazards and integrating human performance criteria into the life-cycle management of material systems. The strategies, goals, and objectives in pursuing that vision provide the mid-term and long-term direction and form the basis for developing an action plan. That plan, the Army Strategic OSHH Action Plan, is the primary document used to implement the strategy. It is a 10-years action plan that corresponds

to the Army planning, programming, and budgeting cycles, and it describes specific actions, sets timelines, establishes responsible parties, and estimates the cost of implementing the program.

This program focused on the pillars of prevention, protection, performance and sustainment and survivability to provide the mechanism to gain resources. The Malaysian Health Hazard Assessment Program strategy is shown metaphorically as a model of a building with a solid foundation and four pillars that support the program and the Army mission. The foundation consists of elements; (1) leadership, (2) customers, (3) people, (4) training, (5) communication, (6) resources, and (7) management and organisation, that shared common values to all of the pillars.

We cannot ensure the success of this program without consistent command support, Army's top level commitment and the integration of safety and health concerns into all army operations and activities. This program address all the areas of the Fish Bone Model that was define in Figure 4.3. We sincerely hope with this program, the Malaysian Army can meet the growing safety and health hazards of today and tomorrow.