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CHAPTER-I

INTRODUCTION

1.0 Back Ground

Profitability and Sustaining Profitability are the keys that dictate the Existence and Longevity of any organization. Profits need not necessarily be money or material benefits. For Armed Forces, the profit is their ability to carry out given missions at any given time, which is known as Combat Readiness. Thus, the very existence of Army is dictated by its Combat Readiness and its ability to Sustain its Combat Readiness. Technology centric warfare today has driven the combat readiness almost synonymous to Combat Equipment Readiness. Improved equipment sustainment therefore is critical to any transforming Army, and is achieved through various processes related to equipment acquisition and sustainment. Acquisition processes generally have long latency and cannot be leveraged much in short span, whereas sustainment processes are dynamic and directly contribute towards overall equipment readiness goals, relatively instantly. Sustaining Equipment Readiness is a major logistic activity that is also highly resource intensive.

Managing Army is synonymous to managing its men. Army being a people-based organisation, managing personnel is always of great concern at every level of the organisation. There were very many models for managing men in Army. Presently Armies adopt a role based model, wherein all the role holders are hierarchically assigned and promoted in the chain. Scott Halter(2012)\(^1\) indicate that US Army expanded and renamed its Personnel Management model as Human Capital Management in 1990.
One of the most important factors in Human Resource Management is achieving the right Job-Fit that is fundamental to efficiency. Today, human and intellectual capitals are perceived to be the strategic resources and therefore, clear estimation of their value has gained significant importance. It is worth recollecting the age old saying “the right man, on the right job, at right time, etc”. While other aspects in this saying can be relegated to lesser significance, fit between the man and his job is paramount and these factors are mutually defining. The job defines the aptness of a man, based on his ability to deliver. Unless it does so, in a common vocabulary, the man-job fit cannot be achieved.

The great tamil philosopher and poet, Thiruvalluvar highlights this aspect in Thirukkural sonnet 517 as under:-

இதைன் இதனால் இவன்முடிக்கும் என்றாய்ந்து
அதைன் அவன்கண் விடல்

It transliterates as 'This man, this work shall thus work out,' let thoughtful king command; Then leave the matter wholly in his servant's hand.

It can be translated as “After having considered, "this man can accomplish this, by these means, let (the king) leave with him the discharge of that duty”.

US Army Department of Defense (DOD), contemplated in its Quadrennial Defense Review in 2006, the possibility of applying competencies, as opposed to simple Knowledge, Skill and Aptitude Model (KSA Model), as the basis for their Human Capital Management (HCM) system. However, this model could not be implemented across the board
and faced criticism. Notwithstanding the above, localized implementation of HCM through competency models are ever since in vogue and are getting growing acceptance.

1.1. Need for the Study

Human Resource is the most important element of any organization. Companies even state that human is their most valuable among all other assets. Knowing its own strengths and weaknesses, is also critical for any organisation. Being the most important resource, HR demands maximum information that is correct, complete and current, to efficiently and effectively manage the HR. SI enables an organisation to know its strengths and weakness is pertaining to its HR.

In military environs, the explosive technological growth in recent years has driven the battle fields replete with sophisticated equipment. Success in modern battle fields is thus dependent on availability of crucial war fighting machineries with the forces. Considering the latency associated with fielding newer equipment in demanding time frame (through acquisition or manufacture), recycling of defective equipment play a major role in sustaining force levels. Unless, amongst other givens, we don’t deploy a right man on the right job, quick recycling is just impossible. The rightness (or the aptness) of a man can be decided only based on his skill sets, with respect to the job. Hence, without accurate skill set information, right-man-for-a-right-job cannot be realized.
Given the dynamics of the modern battlefield conditions, equipment sophistication and enabling technological environment, jobs demand more specialized range of skills.

*E.g To support a Thermal Imager, you need a technician specialized in optics, power electronics, embedded systems, computer science and electrical systems. A Tank Instrument Mechanic, on the other hand, is supposed to handle a group of Thermal Imagers, Laser Based Systems, Night Vision Devices and Sighting Systems of tank FCS. In such a demanding environment, if we continue to consider all instrument mechanics to be interchangeable, it will be a huge blunder.*

Workers in future will be capable of performing a wide range of tasks in a particular theatre and simultaneously be a part of many virtual teams. In such complex scenarios, staffing decisions invariably demand more accurate information of their skill sets.

As Ashley J Tellis(2000)\(^5\) claims that possessing resources in the form of raw equipment inventory or manpower is inadequate, if these two assets are not appropriately structured and trained to solve certain operational tasks in a coherent way. He further adds that *the size and quality of the military manpower indicates the national power (in terms of military power).*

SI enables *competency centric organization that promotes merit* which will act as an inherent motivator and enable a learning organization. It is imperative therefore to create and maintain an inventory of skills of all
logistics personnel, optimize their deployment and maximize the availability of weapons and critical equipment, during mobile operations.

1.2. Type of Research

Primarily, it is a Qualitative Research\(^6\). Skill, being what it is, with multiple levels and extent of manifestations, quantification of skill effects will always remain a challenge. More so, in all HR processes, the underlying characteristic may be the skill / competence, but the same cannot be easily captured in account books. This is the fundamental challenge for HR accounting. In view, the skill based deployment was studied and validated from qualitative perspectives.

The research is to be carried out in a Non-intrusive\(^7\) manner. Armed Forces, being such a wide, less flexible and structured organisation, it is essential to maintain the confidentiality of purpose and also ensure that the research efforts do not affect the armed forces units in any way. Hence the research had to be pursued in a most non-intrusive manner.

The research has to be pursued as an Explorative Research\(^8\) as well. SI concept is to be tried in armed forces for the first time. As such, the approach of the study has to be incremental and progressive. Hence exploratory approach was preferred based on successive findings at every stage.

The research could have had some facets of Applied Research\(^9\) as well especially during implementation stage. Once the concept was validated on limited areas, it is essential to develop and apply the models to find out possible spin offs. However, being a non-intrusive research due to security reasons, application of models were reserved for in-house
research by the Armed Forces. Necessary findings to this effect will be shared with them to this effect, on completion of current research.

1.3. Statement of the Problem

In order to achieve and maximise the combat potential of the Armed Forces, it is essential that equipment availability is maximised. During war, since acquisition and manufacturing have long lead time, it is quick and efficient recycling of defective weapons and equipment, to maximise availability that assumes primacy. It can be achieved only through effective and efficient deployment of technical manpower amongst other resources in logistic echelons entrusted with such tasks.

The effectiveness of manpower in the war zone depends a great deal on their skill sets. Therefore, deployment of manpower in the war zone based on their skill sets, is a major imperative. Presently, there is no SI or information base of skills, available that can enable such deployment. Consequently the effectiveness of equipment recycling in the war zone remains sub-optimal.

A new HR management tool i.e SI, will enable close job fit and achieve optimal deployment of technicians in the logistic echelons during mobile warfare.

It is therefore proposed to study the feasibility of designing a SI system for the Corps of EME and investigate its accuracy, efficiency and effectiveness in enhancing combat potential of the Army.
1.4. Research Questions

The overarching research question is “**Will Skill Based Deployment of Technicians in the warzone enhance the Combat Potential of the Army?**”.

This research question can be further sub-divided into specific questions towards solving the problem stated above and are as given under:-

- Can a systematic approach to personnel management and organisational design be based on identification of critical organisation skills?
- Will skill based deployment of technicians enhance their efficiency and effectiveness?
- Does skill-based-deployment enhance overall combat engineering support and increase the equipment availability through quick recycling?
- Will skill-based-deployment enhance skill development of the personnel?
- Is it time to move from Man-Job fit to Responsibilities /Task Lists – Skill fit?
- Will skill based deployment of technicians be more effective in Mobile operations?
- What are the likely challenges in implementation of skill-based-deployment?
- Will skill-based-deployment lead to any major strategic advantage or limitation in future war scenarios?
1.5. Objectives of the Study

The primary objective is to refine the existing deployment model of technicians, during mobile operations by using Skill Inventory (SI) concepts, so as to achieve optimal efficiency and effectiveness in combat force regeneration in battle fields.

This objective has been framed based on the research questions and primary objective. The sub components of the primary objective can be defined as under:-

- Identifying the skills that matter in a specific domain, task, time and space;
- Evolving metrics with which these skills can be measured and recorded;
- Comparing skill development / loss due to equipment association or lack of it; and
- Measuring change in effectiveness of technicians when resorted to skill based deployment.

1.6. Hypothesis

The hypothesis was formulated after due review of literature and discussions with the defence logistic specialists and the guide. It is a Null Hypothesis and reads as under

*Skill based deployment has no effect on effectiveness of combat engineering support to weapon systems in a Tank Squadron during Mobile Operations.*
**Period of the Study**

The study commenced as early as in 1998 when the first SI models were worked out. Thereafter, the project was guided by a child concept called “System Mechanics”, wherein the competency development through integration of skills was attempted. The current data collection spans over five years with effect from 2009. The secondary data pertaining to the sample respondents were taken from the records that are approx 15 to 18 years old.

**1.7. Scope of the Study**

The Human Resources in Logistic echelons can be broadly categorized as Technical, Technical Support and Administrative. The terms are self explanatory. The technical personnel are those who are directly involved in the maintenance of the equipment, while technical support personnel are required to support the technical activities. Administrative personnel are those who support all personnel for their routine administration. In this research, the scope is limited to technical and technical support personnel associated with military equipment present in a Tank Squadron of an Armoured Formation conducting Mobile Operations.

A battlefield typically contains a vast array of equipment. Each equipment is sustained through a specific equipment management policy and is executed through various repair echelons. In this research, focus was only at repair echelons present within Tactical Battle Area (or the actual war zone)\(^{10}\) or the Combat Zone\(^{11}\). In other words, in the Levels of Repair Analysis (LORA)\(^{12}\), it pertains to O & I level of repairs only.
The repair echelons supporting a Tank Squadron are taken as the base line and all analysis and inferences were drawn there from. The results can be extrapolated to support bigger formations, as required.

1.8. Chapter Scheme

The present study consists of six chapters including the Introduction chapter. In the Introduction chapter, the back ground of the study is described followed by the essential guiding factors of the research like the need, statement of the problem, objectives, hypotheses, scope, period, etc.

Chapter II gives the details of Review of Literature followed by the Past Research Findings, Gap Analysis and paves the way for current research.

In Chapter III, the Conceptual Framework of the research is covered with due amplifications of various military concepts, terms and imperatives. It also lays down the theoretical framework and empirical development of skill inventory.

Chapter IV, exclusively details the methodology followed for the current research. It covers the data collection and analysis plans, tools used and their relevance, phases, outcome expected in each phase and validation approach.

Chapter V, exclusively deals with the entire research work in terms of data collection, analysis, results, findings, interpretations and multi-level hypotheses validation.

Chapter VI, being the concluding chapter outlines the summary of the study, its major findings, implications of the research and way ahead.
In the light of the above, the research report is covered in six chapters as under:-

- **Chapter I** : Introduction
- **Chapter II** : Review of Literature
- **Chapter III** : Conceptual Framework of Skill Inventory
- **Chapter IV** : Methodology of the Study
- **Chapter V** : Combat Engineering Effectiveness in Logistic Echelons during Mobile Warfare
- **Chapter VI** : Summary and Conclusion
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